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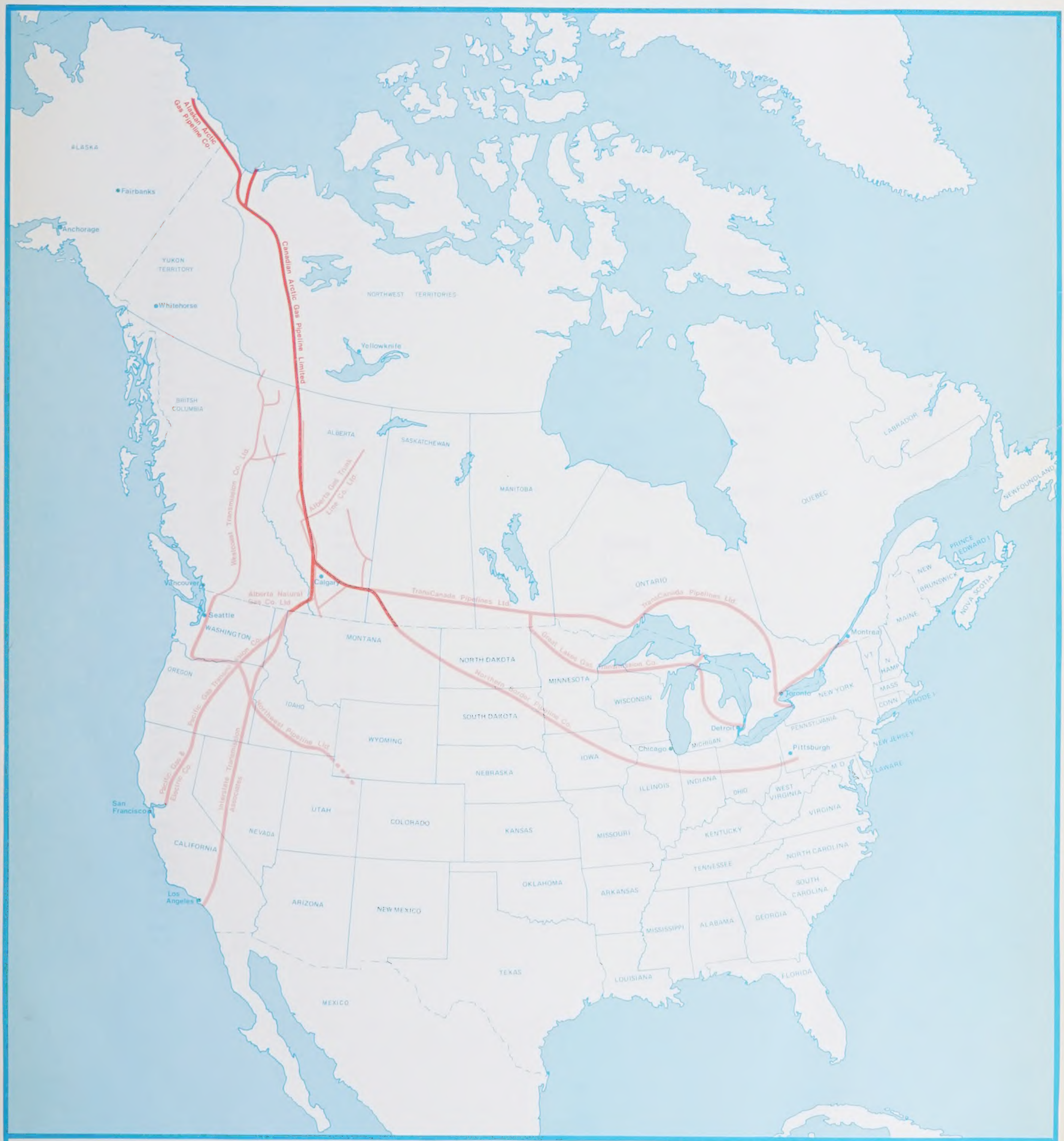
ALIGNMENT SHEETS

PIPELINE ROUTE IN CANADA
SOUTH OF 60° LATITUDE



CONTINENTAL DELIVERY SYSTEM

ARCTIC GAS PIPELINE SYSTEMS

ALASKAN ARCTIC GAS PIPELINE COMPANY

CANADIAN ARCTIC GAS PIPELINE LIMITED

AND

CONNECTING SOUTHERN CANADIAN AND U.S. PIPELINE SYSTEMS

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ALIGNMENT SHEETS

PIPELINE ROUTE IN CANADA SOUTH OF 60° LATITUDE

For

CANADIAN ARCTIC GAS PIPELINE LIMITED

Prepared by

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

DESCRIPTION OF ALIGNMENT SHEETS AND OVERLAYS

This volume contains a group of photomosaic strip maps — called "Alignment Sheets" — which show the area proposed to be traversed by the proposed pipeline. The proposed location of the pipeline and related facilities are shown on each sheet, and the sheets contained in this volume show the complete route over the area covered by this volume, with the top sheet covering the most western or northern end of the area, with following sheets moving to the east or south. The location of the proposed Mackenzie Highway is shown on the Alignment Sheets. Such location is tentative and may be changed in several areas. In areas where various highway routes are being considered, all have been shown. Minor adjustments may have to be made to the pipeline and related facilities locations to avoid conflict areas when the highway location is finally selected.

The other data which appear on each Alignment Sheet, and the Environmental Data sheets which accompany Alignment Sheets, are described hereinafter.

ALIGNMENT SHEETS

A sheet following this sheet is a Master Index Map, (a small version of which is set forth on the lower right hand corner of each Alignment Sheet), and each Alignment Sheet may be located on such map. The Master Index Map has the route divided into large sections, each of which is identified by numbers and letters, such as 2A. These sections are 2A, 2B and 2C.

Within each such Section, each Alignment Sheet has been assigned an arabic numeral, so that a given Alignment Sheet can be identified by a designation such as sheet 5 of Section 1A on the Master Index Map. Such designation is carried over to each Alignment Sheet, since the above described desgination on the Map relates to the first and the last parts of the nine digit drawing number which appears in the bottom right hand corner of each Alignment Sheet. For example, Alignment Sheet 1A-0200-1005 is the one described earlier as sheet number 5 of Section 1A on the Master Index Map.

ACCURACY OF SCALE

The mosaic sections of the Alignment Sheets are uncontrolled, which means that no corrections have been made for variations in flying altitude, airplane tilt, or distortion caused by mountainous terrain. As a result, the nominal horizontal scale of 1" = 2000' shown on the Alignment Sheets is only approximate. The scale for each Alignment Sheet was checked against topographical maps, and the horizontal scale accruacy, expressed as a percentage, was calculated for each individual sheet. A weighted average was then calculated for the line sections composed of the groups of Alignment Sheets listed below. For example, the overall accuracy of the Alignment Sheets covering the line from Richards Island to the Junction of that line with the line from Alaska, across the Yukon (Sheets 1A-0200-1001 to 1A-0200-1010) is -1.4%. It should be emphasized that this inaccuracy applies only to the mosaic sections of the Alignment Sheets and not to the pipeline mileages, which were scaled from government topographical maps and transferred to the mosaics.

Alignment Sheets	Horizontal Scale Accuracy
2A-0200-1001 to 2A-0200-1050	-0.7%
2B-0200-1001 to 2B-0200-1031	+0.6%
2C-0200-1001 to 2C-0200-1025	-0.4%

AERIAL PHOTOGRAPHY

Aerial Photography used to produce the mosaic has been obtained since 1970, except for some short Sections where older government photography was used. The photography is primarily at a scale of 1" = 2000'. Where larger scale photography was used, scale adjustments were made so that the resultant mosaics all have the same nominal horizontal scale.

ALIGNMENT SHEET DATA

The following information appears on the Alignment Sheets:

1. Pipeline and Facilities Location

The facilities referred to are pipeline compressor stations, meter stations, mainline block valves, airstrips, and associated access roads. Pipeline mileposts are also shown.

2. Terrain and Soils Information

Airphoto interpreted terrain typing has been mapped on the photomosaic portion of the Alignment Sheets north of the Chinchaga River crossings, approximately 150 miles south of the 60th parallel. A description and analysis of the terrain typing and the confirming borehole data is presented in Section 8.b 1.3.6.

3. Borrow Areas, Staging Areas, Access Roads

The borrow areas, staging areas, and associated permanent and temporary access roads planned by the Applicant have been shown in those situations in which they appear within the area covered by the mosaic. See also Section 13.a 2.2.

4. Profile

An approximate pipeline profile is shown on each Alignment Sheet at a horizontal scale of 1" = 2000' and a vertical scale of 1" = 200'. This profile was plotted from 1:50,000 Series A721 or 1:250,000 Series A502 topographical maps.

5. Erosion Control Categories

The category of erosion control measure applicable to the area shown on the mosaic is stated on each sheet. An explanation of the parameters that were used to select the categories of erosion control measures and a description of those categories, appears in Section 8.b 1.3.8.

6. Areas of Potential Buoyancy

The buoyancy condition and design solution applicable to the area shown on the mosaic is stated on each sheet. A description of potential buoyancy conditions and design solutions relative thereto appears in Section 8.b 1.3.9.

7. Revegetation Categories

Right-of-way revegetation technique code numbers appear on the Alignment Sheets. Those numbers relate to categories of materials to be used and are more fully described in Section 8.b 1.3.8. Revegetation Application techniques are described in Section 13.a 1.6.8.

8. Reference Drawings

Reference drawing numbers are shown on the Alignment Sheets relative to river and stream crossings, road crossings, railroad crossings, compressor stations, block valves, and measurement stations.

The various reference drawings to which such numbers related appear in the following Sections:

Reference Drawing	Section
River Crossings	8.b 3
Road Crossings	8.b 3
Railroad Crossings	8.b 3
Compressor Stations	8.b 3
Block Valves	8.b 3
Measurement Stationers	8.b 3

Erosion control and buoyancy measures relative to the crossing are indicated or referred to on the river crossing drawings.

9. Depth of Cover

Minimum depth of cover over the pipeline is shown on the Alignment Sheets as a general note. The factors upon which depth of cover is dependent appear in Section 8.b 1.3.9.

10. Mapping Co-ordinate System

The Universal Transverse Mercator Grid System is shown on all Alignment Sheets north of the 59th parallel. Township and range lines are shown on all sheets south of the 59th parallel, except for sheets which relate to areas in British Columbia, which show the Universal Transverse Mercator Grid System.

ENVIRONMENTAL DATA SHEETS

The second copy of the Alignment Sheets are Environmental Data Sheets which indicate environmental information relative to the area covered by the mosaic, including any specific environmental concerns and the related protective measure. Such information covers vegetation, birds, fish, mammals, archeology and current human land use.

Unless otherwise stated, the comments on the data sheets are applicable to a zone which is approximately 2,000 feet wide, on either side of the pipeline route, and which extends the full length of the sheet on which the comments appear. Vertical lines appearing the comment space indicate a boundary for comment applicability when a comment covers less than the full length of the sheet. Absence of comment indicates an areas of relatively low sensitivity.

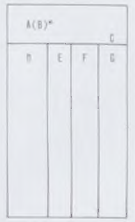
PRINT REDUCTION AND SCALE

All Alignment Sheets contained in this volume have been photo-reduced from originals which were larger than these prints. The nominal scale on the original drawings is 1" = 2000'. The nominal scale on the prints in this volume is 1" = 2530'.

On each print, a bar scale appears in the lower right corner, above the title block. The bar scale is correct and may be used to scale distances in the photomosaic.

A. DRILL HOLE DATA

1. DATA PRESENTATION



A - Drill hole number.

B - Temperature probe installation number.

C - Date boring made.

D - Soil and bedrock description (see Section B, 'Soil Description')

E - Depth in feet of strata changes, and symbolic representation of soil and bedrock.

F - Permafrost Conditions
column shaded - indicates frozen soil.
column unshaded - indicates unfrozen soil.
---- indicates interpreted depth of active layer.
Frozen soil described in accordance with NRC permafrost description system (see Section C).

G - Water or ice content expressed in percent of dry weight of soil solids.

* - Indicates boring made in area exhibiting surface disturbances (e.g. cleared areas, seismic lines, winter roads).

NOTES:
1. A double line at the bottom of the drill hole column indicates 'Refusal' (i.e. the drill could not penetrate further).
2. The drill hole data is not plotted to scale, but the water or ice content determinations are shown in their true relative position within a given stratum.

2. GRAPHIC SOIL SYMBOLS

See Section B for explanation of soil description terms and symbols

▨	BEDROCK	▨	CL-ML	▤	ICE	▥	OL	▨	SP, SW
▨	BOULDERS, COBBLES	▨	GC	▨	MH, MH-ML	▨	PEAT, MOSS	▨	TILL
▨	CH, CH-CL	▨	GM	▥	ML, ML-MH	▨	SC	▤	WATER
▨	CL, CL-CH	▨	GP, GW	▨	OH	▨	SM		

3. SOURCES OF DRILL HOLE DATA

DRILL HOLE NUMBERS	DATE PERFORMED	TYPE OF DRILLING
2 - 282	Feb. - April, 1971	Rotary (air)
285-497	June - July, 1971	Auger
1000 series 2000 series 3000 series 4000 series	July - Aug. 1972	Auger
5000 series 6000 series 7000 series	Aug. - Sept. 1972	Rotary (air)
2A - 69B	Aug. - Nov. 1970	Auger
5NCPC - 373NCPC	Feb. - April, 1972	Auger
72C series	Feb. - April, 1972	Rotary (air)
A2-A114	June - July, 1971	Auger
B - series	Sept. - Nov. 1969	Rotary (air)
H72 series	Aug.- Sept. 1972	Auger
N series	June - July, 1971	Auger
N73 series	May - June, 1973	Auger
P series PA series	Feb. - April, 1971	Rotary (air)
PRS series	October, 1970	Auger, Drive Sampling
R series	Feb. - April, 1971	Auger
AG series	July - Oct. 1973	Auger

NOTES.

1. Drill hole data is shown on the alignment sheets only for those drill holes which are within or near the mosaic area on the alignment sheets.
2. The drill hole numbers are shown above as they appear on the alignment sheets.

B. SOIL DESCRIPTION

1 SOIL IDENTIFICATION SYSTEM

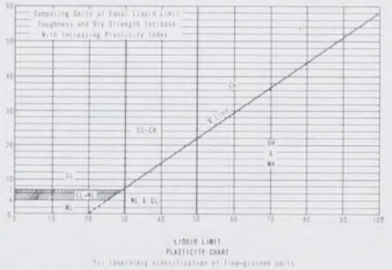
The soil descriptions obtained from the drilling programs described in section A.3 have been converted into abbreviated soil descriptions on the alignment sheets using the Unified Soil Classification (USC) system symbols (see section B.2). The soil descriptions appear in area D of the boring column (see Section A-1). The classification is given in bold type, and data which modifies or augments the basic USC symbol appears in lighter type. The terms which modify or augument the USC descriptions are based on a system of soil identification developed by D. Burmister. An abbreviated description of the Burmister system is presented in Section B-3. The abbreviation and terms used which are not covered by the two systems are listed in Section B-4.

2 UNIFIED SOIL CLASSIFICATION SYSTEM

A complete description of the USC system of soil classification will be found in Reference 1, described in Section B.5 below. Descriptions of this system will also be found in References 2 and 3.

UNIFIED SOIL CLASSIFICATION (Including Identification and Description)

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES	FIELD IDENTIFICATION PROCEDURES (excluding particles larger than 3 inches and basing fraction on estimated weights)	LABORATORY CLASSIFICATION CRITERIA		
COARSE-GRAINED SOILS More than half of material is larger than No. 200 sieve size	GRAVELS More than half of coarse fraction is larger than No. 4 sieve size	Clean gravels (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate particle sizes	Determine percentages of gravel and sand from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size) coarse-grained soils are classified as follows: Less than 5% GW, GP, SW, SP; More than 12% GM, GC, SM, SC; 5% to 12% Borderline cases requiring use of dual symbols	$C_u = \frac{D_{60}}{D_{10}}$ Greater than 4 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between one and 3	
			GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines	Predominantly one size or a range of sizes with some intermediate sizes missing		Not meeting all gradation req'ts for GW	
		Gravels with fines (Appreciable amount of fines)	GM	Silty gravels, gravel-sand-silt mixtures	Nonplastic fines or fines with low plasticity (see ML below)		Atterberg limits below "A" line or PI less than 4	Above "A" line with PI between 4 and 7 are borderline cases requiring use of dual symbols
			GC	Clayey gravels gravel-sand-clay mixtures	Plastic fines(see CL below)		Atterberg limits above "A" line or PI greater than 7	
	SANDS More than half of coarse fraction is smaller than No. 4 sieve size	Clean sands (Little or no fines)	SW	Well-graded sands gravelly sands little or no fines	Wide range in grain size and substantial amounts of all intermediate particle sizes		$C_u = \frac{D_{60}}{D_{10}}$ Greater than 6 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between one and 3	
			SP	Poorly graded sands gravelly sands little or no fines	Predominantly one size or a range of sizes with some intermediate sizes missing		Not meeting all gradation req'ts for SW	
		Sands with fines (Appreciable amount of fines)	SM	Silty sands sand-silt mixtures	Nonplastic fines or fines with low plasticity (see ML below)		Atterberg limits below "A" line or PI less than 4	Limits plotting in hatched zone with PI between 4 and 7 are borderline cases req'g use of dual symbols
			SC	Clayey sands sand-clay mixtures	Plastic fines(see CL below)		Atterberg limits above "A" line or PI greater than 7	
FINE-GRAINED SOILS More than half of material is smaller than No. 200 sieve size	Silts and Clays Liquid limit less than 50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity				
			CL	Inorganic clays of low to medium plasticity, gravelly clays sandy clays, silty clays, lean clays				
			OL	Organic silts and organic silty clays of low plasticity				
	Silts and Clays Liquid limit greater than 50		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts				
			CH	Inorganic clays of high plasticity, fat clays				
			OH	Organic clays of medium to high plasticity, organic silts				
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils				



PLASTICITY CHART
For laboratory classification of fine-grained soils

NOTES:

1. The above chart has been adapted from Table 1 in Reference 1, below.
2. Soils possessing characteristics of two groups are designated by combinations of group symbols. For example, GW-GC, well-graded sand-gravel mixture with clay binder.
3. Clay soils of intermediate or medium plasticity (i.e., liquid limit between 30 and 50) are indicated by the compound symbol CL-CH. Clay soils with a liquid limit greater than 50 but less than 55 are indicated by the compound symbol CH-CL.
4. All sieve sizes on the above chart are U.S. standard.

3 BURMISTER SOIL IDENTIFICATION SYSTEM

The Burmister soil identification system has been used to augment or modify the USC symbols. These modifing terms appear in lighter type in the descriptions. The chart presented below summarizes the elements of the Burmister system which appear on the alignment sheets. A complete description of this system can be found in Reference 4, listed below.

Definitions of Terms Identifying The Composition of Granular Soils						Definitions of Terms Identifying The Gradation of Granular Components		
Component	Identification		Terms Identifying Proportions		Defining Range of Percentages by Weight	Gradation Designation for Identification		Defining Proportions
	Written	Symbol	Written	Symbol		As Written	Symbol	
Principal component	GRAVEL	G	—	—	50 or more	coarse to fine	cf	All fractions greater than 10 per cent of the component. but the medium component predominates)
	SAND	S	—	—		or		
	SILT	$\bar{S}$	—	—		coarse medium to fine	cmf	
Minor component	Gravel	G	and	a+	35 to 50	coarse to medium	cm	less than 10 per cent fine
	Sand	S	some	s+	20 to 35	medium to fine	mf	less than 10 per cent coarse
	Silt	$\bar{S}$	little	l+	10 to 20	medium	m	less than 10 per cent coarse and fine
			trace	t+	1 to 10	fine	f	less than 10 per cent coarse and medium

NOTES: (1) The chart has been adapted from Table 11 in Reference 4.

B. SOIL DESCRIPTION

4 ABBREVIATIONS USED FOR SOIL DESCRIPTIONS

BDRK	Bedrock	lnsd	lensed	SHL	Shale
bldr(s)	boulder(s)	lyrd	layered	sm(s)	seam(s)
cbl(s)	cobble(s)	Ms	Moss	SS	Sandstone
cvr	cover	org	organic	$\bar{S}$s	Siltstone
fgmt(s)	fragment(s)	Pt	Peat	veg	Vegetation
Gs	Grass	rt(s)	root(s)	vvd	varved
wd	wood	Wx	Weathered (bedrock)		

NOTE:

In those instances where the field personnel have identified a stratum as TILL on the boring logs, this term has been included in the stratum description on the alignment sheets. Where the stratum has been identified as 'TILL-like', it has been noted as 'TILL' on the alignment sheets. Till is a geological term describing soil deposited by glacial action which characteristically consists of a heterogeneous mixture of clay through gravel soil sizes, containing varying amounts of cobbles and boulders.

5 REFERENCES

(1) UNIFIED SOIL CLASSIFICATION SYSTEM, TECHNICAL No. 3-357; prepared for Office, Chief of Engineers by Waterways Experimental Station, Vicksburg Mississippi, Corp of Engineers, U.S.A. Army; Volume 1, March 1953.
(2) Wagner, A.A., 'Classifying Soils by Unified Soil Classification System; in PROCEDURES FOR TESTING SOILS, published by American Society for Testing and Materials, Philadelphia, Pa; Fourth Edition (revised), 1963; Chapter 1.
(3) EARTH MANUAL, prepared by Bureau of Reclamation, U.S.A. Dept. of Interior, First Edition (revised), 1963; Chapter 1.
(4) Burmister, D.M.; Identification of Soils;:in PROCEDURES FOR TESTING SOILS, published by American Society for Testing and Materials, Philadelphia, Pa; Fourth Edition, December 1964, pp. 221-233.

C. PERMAFROST DESCRIPTIONS

1. GENERAL

The nature of the frozen soils encountered in the borings has been described in accordance with the N.R.C. system of permafrost description which can be found in Reference 1. This system is summarized in the tables, Section C.2 below. In some instances, these descriptions are given for frozen active layer soils; in other instances insufficient data was recorded on the boring logs to allow assignation of a permafrost category.

2. PERMAFROST DESCRIPTION SYSTEM

A. ICE NOT VISIBLE

Group	Subgroup		
Symbol	Description	Symbol	
N	Poorly bonded or friable	Nf	
	No excess ice well-bonded Excess ice	Nb	Nbn Nbe

B. VISIBLE ICE LESS THAN 1 INCH THICK

Group	Subgroup	
Symbol	Description	Symbol
V	Individual ice crystal or inclusions	Vx
	Ice coatings on particles	Vc
	Random or irregularly oriented ice formations	Vr
	Stratified or distinctly oriented ice formations	Vs

C. VISIBLE ICE GREATER THAN 1 INCH THICK

Group	Subgroup	
Symbol	Description	Symbol
ICE	Ice with soil inclusions	ICE
	Ice without soil inclusions	ICE

NOTES: (1) The above charts have been adapted from Table 1 in Reference 1

3 REFERENCES

(1) Philainen, J.A., and Johnston, G.H., GUIDE TO A FIELD DESCRIPTION OF PERMAFROST FOR ENGINEERING PURPOSES TECHNICAL MEMORANDUM 79 (NRC 7576), published by Associate Committee on Soil and Snow Mechanics, National Research Council of Canada, Ottawa, Ontario, October 1963.

D. TERRAIN MAPPING

1. GENERAL

The terrain mapping presented on the alignment sheets was done by J.D. Mollard and Associates, Regina, Saskatchewan. This mapping was done using airphoto interpretation techniques including stereoscopic examination of aerial photography, review and analysis of available published geological and geographical information, and analysis of field boring data obtained for this project.

The terrain mapping generally outlines landforms, but, where the scale of the photography permits, the landform is further subdivided into ''phases'' (distinctly different expressions of the same basic landform) and ''features'' (secondary landform elements within a basic landform, e.g., sand dunes). In some cases two or more landforms may be so intimately associated that they cannot be separated at the scale of the photography used. This type of map unit is termed a ''complex''.

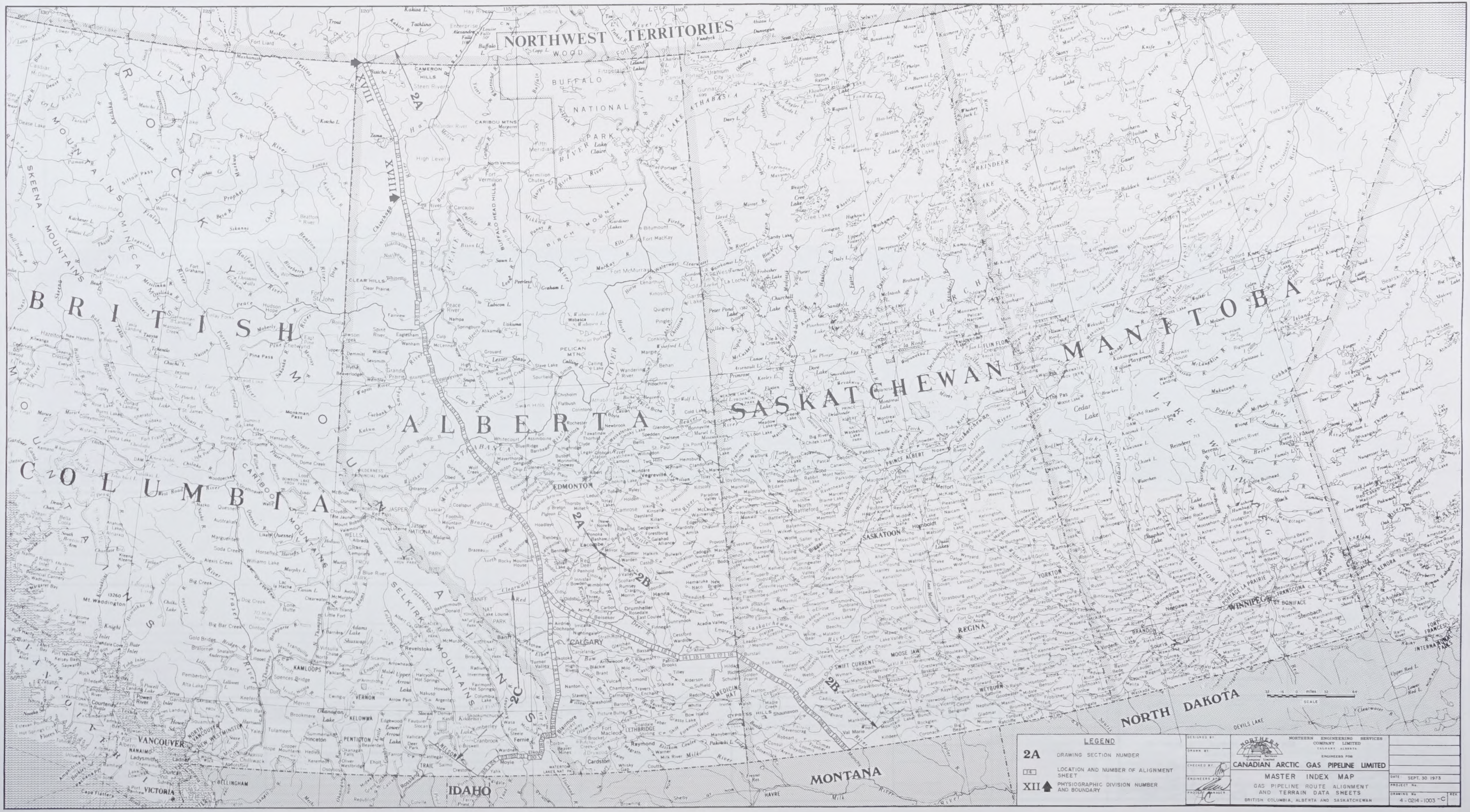
The terrain map unit symbols were generally created from the initial letters of the phrase describing the landform they designate. For example, ''AFP'' represents ''Active Flood Plain''; ''GLB'' represents ''Glacial Lake Basin''. Other symbols are convenient abbreviations of the landform element, e.g., ''TK'' for the thermokarst features.

Each terrain map unit within a particular region (called a ''physiographic division'' -see below) is characterized by a data sheet which describes the nature of that unit in detail including; a description of the landform and its constituent materials, permafrost conditions, topography, vegetation, a stereoscopic pair of airphotos illustrating the terrain unit, the major diagnostic features used to identify the landform a list of the boreholes made in the terrain unit, and estimate of the engineering properties of the materials comprising the landform, and drainage characteristics within the map unit. A complete assemblage of such data sheets is called a ''terrain legend''. For convenience, an abbreviated ''Terrain Typing Legend'', providing a brief description of the terrain map units, is presented on the right hand side of each alignment sheet.

Considerable variation in the nature of the materials comprising a landform can occur depending on the climate, topography and geology of a given region (e.g., mountainous vs. plains areas; sedimentary vs. igneous bedrock). In order that such variations could be taken into account, the terrain mapping is presented in regional segments called ''physiographic divisions''. These physiographic divisions are designated by roman numerals appearing at the top of the abbreviated terrain legend on the alignment sheets, and the location of these segments is shown on the ''Master Index Map'' prefacing the alignment sheets.

NORTHERN Engineering Services Company Limited
NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

DRILL HOLE, SOIL DESCRIPTION
PERMAFROST DESCRIPTIONS
AND TERRAIN MAPPING



LEGEND

2A	DRAWING SECTION NUMBER
14	LOCATION AND NUMBER OF ALIGNMENT SHEET
XII ⬆	PHYSIOGRAPHIC DIVISION NUMBER AND BOUNDARY

DESIGNED BY
DRAWN BY
CHECKED BY
ENGINEERS APP.
PROJECT MANAGER

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

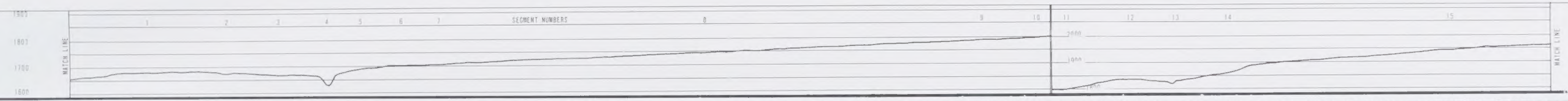
MASTER INDEX MAP
GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA SHEETS
BRITISH COLUMBIA, ALBERTA AND SASKATCHEWAN

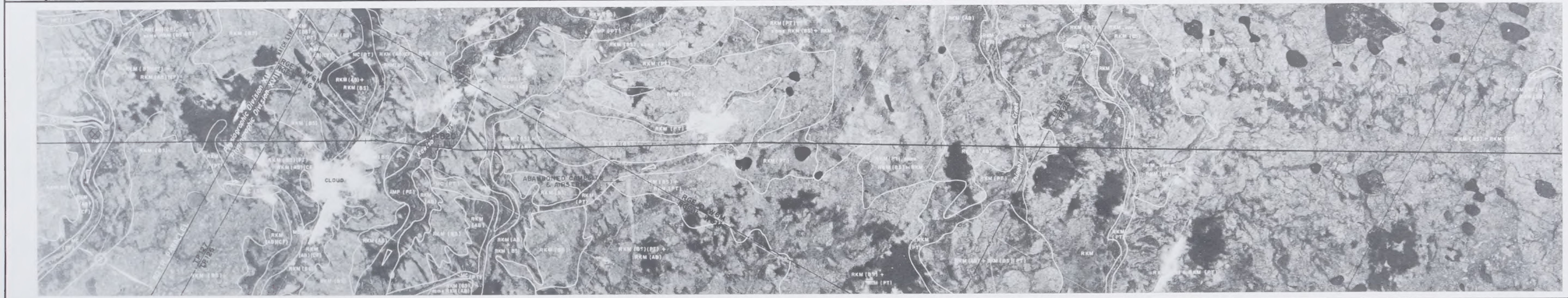
DATE SEPT. 30 1973
PROJECT No.
DRAWING No. 4-0214-1003 -C
REV.

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

REFERENCE DRAWINGS & NOTES: MATCH LINE 818.20 · 4-0210-1099 · 4-0210-1099 · 4-0210-1099 · MATCH LINE 828.70

CHAINAGE (miles): 00.00 · 1.05 · 1.15 · 1.67 · 1.80 · 2.23 · 2.31 · 2.76 · 6.27 · 6.94 · 7.02 · 7.30 · 7.88 · 7.97 · 8.53 · 10.50

DESIGN DATA

SEGMENT Nº	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SEGMENT LENGTH	1.05	0.10	0.52	0.13	0.43	0.08	0.45	3.51	0.67	0.08	0.28	0.58	0.09	0.56	1.97
EROSION CONTROL	EC-1C	EC-8	EC-1C	N A	EC-1C	EC-8	EC-1C	EC-1D	EC-1C	N A	EC-1D	EC-1C	N A	EC-1D	EC-1C
BUOY.	B-2	B-1	B-2	N A	B-2	B-1	B-2	B-1	B-0	N A	B-1	B-0	N A	B-2	B-1
REVEG.	III-V-2	III-V-4	III-V-2	II-V-6	III-V-2	III-V-4	III-V-2			III-V-6	III-V-2		III-V-6	III-V-2	

FOOTAGE THIS SHEET

0 0.5 1.0
SCALE (miles)

TERRAIN TYPING LEGEND

XVIII — ROUTE PARALLEL TO CHINCHAGA RIVER, NORTHERN ALBERTA PHYSIOGRAPHIC DIVISION

TERRAIN TYPES

AMP	Alluvial meander plain: organic silt and fine sand over thin, discontinuous coarse sand and/or gravel over till
GLB	Glacial lake basin: nearly level clay and silty clay plains
K	Kames: completely sorted and stratified mounds of sand and/or gravel with minor silt, till, and boulders
OW	Outwash plain: channelled sand and/or gravel deposits
RKM	Ridge and knoll moraine: undulating to uniformly sloping ground moraine composed of lodgment till

FEATURES AND PHASES

Topographic features

CF	Crevasse fillings: narrow sublinear ridges of silt, sand, gravel, and ablation till
EVB	Eroded valley banks
OSF	Old slide features along river banks

Hydrographic features

MC	Meltwater channels
OB	Oxbow channels
SL	Slopewash features: fine subparallel drainage courses, often with associated surficial organic silt and sand slopewash deposits up to 4 ft thick over till

Shallow phases

AB	2 to 5 ft of loose gravelly-sandy-silt ablation till over lodgement till
SS	5 to 15 ft (but generally less than 10 ft) surficial veneer. Note associated parent terrain types to determine stratigraphy, as SL(SS)/RKM(SS)

Permafrost-affected peatland phases*

(Note: Peatland phases are shown along with the underlying mineral-soil terrain type.)

BS	Speckled bog pattern: elevated peat bogs, mainly peat plateaus with some palsas. White speckles are small interjacent thaw depressions (collapse scars, wet sedge meadows) resulting from local permafrost degradation, usually pre-conditioned by forest fires. Permafrost is usually absent in the white speckles. In GLB(BS) areas the peat is up to 8 ft but is usually less than 3 ft deep; in RKM(BS) areas the peat is 3 to 20 ft deep but commonly 3 to 15 ft in depressions and is usually less than 6 ft on slopes
PT	Generally an even grey peatland appearance, with some waterflow patterns. Locally, transitional to reticulated and ribbed fens. Expect peat 3 to 20 ft deep
PT-S	Spotty pattern of peat areas, with peat up to 15 ft deep in small areas that are 1 to 10 acres in size and cover 25 to 50% of the land surface
SR	Reticulated and ribbed fens. Water table at or above ground surface in hollows, with sparse trees on ridges (strings). Expect peat depths up to 12 ft
TP	Small thermokarst basins containing standing stagnant water. Occurs on peatlands where sporadic permafrost has degraded and shallow water fills small thaw basins

COMPLEXES

Complexes are shown where two terrain types are either too small or too complexly intermingled to separate at the scale of aerial photography. Examples of percentages in combined terrain units follow:

RKM(BS)+RKM(SR) indicates over 50% BS and 25 to 50% SR
RKM(BS),some RKM(SR) indicates over 75% BS and less than 25% SR
RKM+RKM(BS)(PT) indicates that peat areas in the latter unit, RKM(BS)(PT), comprise more than 50% bog peat (BS) and 25 to 50% uniform-toned fen peat (PT)

---

*In the southern fringe of the discontinuous permafrost zone, permafrost occurs in scattered islands a few square feet to several acres in size and is confined to certain types of organic terrain, mainly elevated peat plateaus and occasional palsas (BS areas). The permafrost is generally not present in fen land (SR and PT areas). Other isolated occurrences of permafrost are associated with steeper north-facing slopes and areas of dense black spruce, where increased shading from summer thawing and reduced snow cover enhance permafrost formation and preservation (after Roger J.E. Brown, Permafrost Section, National Research Council of Canada, Ottawa)

TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK.

PIPELINE LEGEND

⊼	CARRIER PIPE (cover shown)	○	POINT OF INTERSECTION	—··—	PERMANENT ROAD
⊸	CARRIER PIPE (berm cover)	⊙	DRILL HOLE LOCATION	— — —	TEMPORARY ROAD
▼	BERM BREAK	⚲	WARNING SIGN	Ⓗ	HELIPAD
▀	SWAMP WEIGHT	⊕	MILEPOST SIGN AIRCRAFT	Ⓜ	MEASURING STATION
■	RIVER WEIGHT	★	CHAINAGE EQUATION	⊗	COMMUNICATIONS TOWER
┼	FROST ANCHOR	▢	COMPRESSOR STATION	⊥	SIDE VALVE
┼	SCREW ANCHOR	▭	AIR STRIP	++++++	WINTER TRAIL
━	HEAVY WALL PIPE	△	STORAGE OR STAGING AREA		
━	CASING PIPE	▲	CAMP SITE		
⊟	ANCHOR BLOCK (concrete)	◎	STAGING AREA & CAMP SITE		
⊶	BLOCK VALVE	⊗	BORROW SITE		
○~	TEST LEAD & DIRECTION OF WIRES	■	WHARF		

PIPE DATA	QUAN
CARRIER - 48" O.D. x 0.720" W.T. GRADE 70	
HEAVYWALL - 48" O.D. x 1.034" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQ'N Nº

BUOYANCY AND EROSION CONTROL LEGEND

B-0	No buoyancy
B-1	Potential buoyant conditions along segment
B-2	Potential buoyant conditions along portions of the segment
N/A	Refer to river crossing drawing
EC-1	Average slope along segment less than 3° Erodible soil. Control measures required in low areas only
EC-2	Average slope along segment greater than 3° Erodible soil. Close spaced control measures required
EC-3	Average slope along segment less than 3° Non-erodible soil. Minimal control measures required
EC-4	Average slope along segment greater than 3° Non-erodible soil. Control measures required in low areas only
EC-5	Unstable water course. Deeper burial required along segment
EC-6	Control measures required on steep sideslopes
EC-7	Control measures required at steep scarps
EC-8	Low-lying sensitive areas. Measures to preserve micro drainage

GENERAL NOTES:
1. THE TERRAIN AND SOILS INFORMATION ON THIS DRAWING IS BASED ON AIRPHOTO INTERPRETATION AND DRILL HOLE DATA AS INDICATED. IT IS THE CONTRACTORS RESPONSIBILITY TO ASSURE HIMSELF OF THIS INFORMATION.
2. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
3. MINIMUM DEPTH OF COVER = 2.5 FEET.

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CR23174	71-83

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE	2100 p.s.i.
MAX. OPERATING PRESSURE	1680 p.s.i.

Nº	DATE	REVISION	APP'D BY	APP'D BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA
ALBERTA

UPSTREAM M.P. 818
DOWNSTREAM M.P. 829

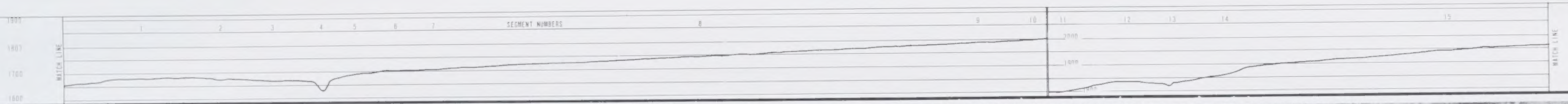
DRN BY	DATE
CHKD BY	Jan 18/74
APPRD BY	Jan 22/74

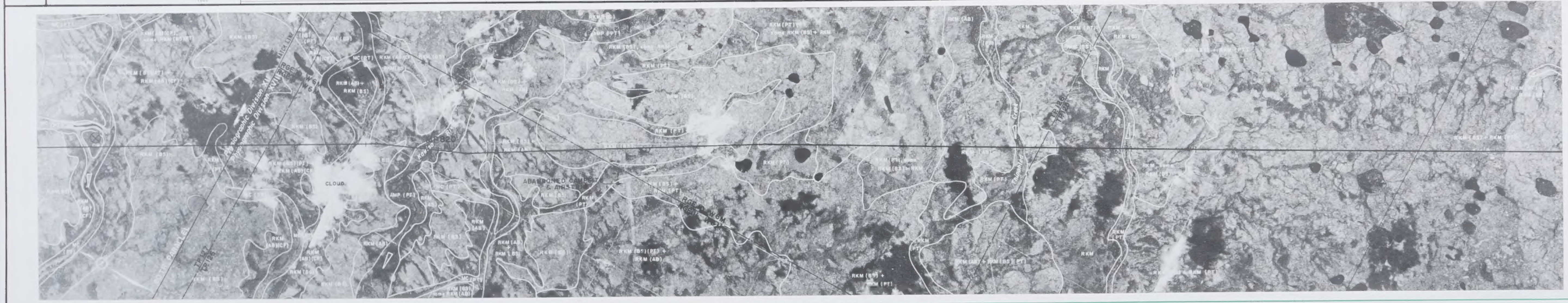
SCALE - 1" = 2000'
SHEET 1 OF 50
2A-0200-1001

OWNERSHIP

DRILL HOLE DATA

PROFILE





ENVIRONMENTAL DATA AND PROTECTION MEASURES

FISH

BIRDS

MAMMALS

VEGETATION

Scattered black spruce appleberry lichen on peat deposits
Sphagnum bog in thaw depressions
Jackpine lingonberry on crevasse fillings and knolls
Sedge fen in drainageways and thaw depressions

LAND USE

OTHERS

TERRAIN TYPING LEGEND

XVIII — 60TH PARALLEL TO CHINCHAGA RIVER,
NORTHERN ALBERTA PHYSIOGRAPHIC DIVISION

TERRAIN TYPES

AMP	Alluvial meander plain: organic silt and fine sand over thin discontinuous coarse sand and/or gravel over till
GLB	Glacial lake basin: nearly level clay and silty clay plains
K	Kames: complexly sorted and stratified mounds of sand and/or gravel with minor silt, till, and boulders
OW	Outwash plain: channelled sand and/or gravel deposits
RKM	Ridge and knoll moraine: undulating to uniformly sloping ground moraine composed of lodgement till

FEATURES AND PHASES

Topographic features

CF	Crevasse fillings: narrow sublinear ridges of silt, sand, gravel, and ablation till
EVB	Eroded valley banks
OSF	Old slide features along river banks

Hydrographic features

MC	Meltwater channels
OX	Oxbow channels
SL	Slopewash features: fine subparallel drainage courses, often with associated surficial organic silt and sand slopewash deposits up to 4 ft thick over till

Shallow phases

AB	2 to 5 ft of loose gravelly-sand-silt ablation till over lodgement till
SH	5 to 15 ft (but generally less than 10 ft) surficial veneer. Note associated parent terrain types to determine stratigraphy, as GL(SH)/RKM(SH)

Permafrost-affected peatland phases*

(Note: Peatland phases are shown along with the underlying mineral-soil terrain type.)

BS	Speckled bog pattern: elevated peat bogs, mainly peat plateaus with some palsas. White speckles are small interjacent thaw depressions (collapse scars, wet sedge meadows) resulting from local permafrost degradation, usually pre-conditioned by forest fires. Permafrost is usually absent in the white speckles. In GLB(BS) areas the peat is up to 8 ft but is usually less than 3 ft deep; in RKM(BS) areas the peat is 3 to 20 ft deep but commonly 5 to 15 ft in depressions and is usually less than 6 ft on slopes
PT	Generally an even gray peatland appearance, with some waterflow patterns. Locally, transitional to reticulated and ribbed fens. Expect peat 3 to 20 ft deep
PT-S	Spotty pattern of peat areas, with peat up to 15 ft deep in small areas that are 1 to 10 acres in size and cover 25 to 50% of the land surface
SR	Reticulated and ribbed fens. Water table at or above ground surface in hollows, with sparse trees on ridges (strings). Expect peat depths up to 12 ft
TK	Small thermokarst basins containing standing stagnant water. Occurs on peatlands where sporadic permafrost has degraded and shallow water fills small thaw basins

COMPLEXES

Complexes are shown where two terrain types are either too small or too complexly intermingled to separate at the scale of aerial photography. Examples of percentages in combined terrain units follow:

RKM(BS)+RKM(SR) indicates over 50% BS and 25 to 50% SR
RKM(BS),some RKM(SR) indicates over 75% BS and less than 25% SR
RKM+RKM(BS)(PT) indicates that peat areas in the latter unit, RKM(BS)(PT), comprise more than 50% bog peat (BS) and 25 to 50% uniform-toned fen peat (PT)

---

*In the southern fringe of the discontinuous permafrost zone, permafrost occurs in scattered islands a few square feet to several acres in size and is confined to certain types of organic terrain, mainly elevated peat plateaus and occasional palsas (BS areas). The permafrost is generally not present in fen land (SR and PT areas). Other isolated occurrences of permafrost are associated with steeper north-facing slopes and areas of dense black spruce, where increased shading from summer thawing and reduced snow cover enhance permafrost formation and preservation (after Roger J.E. Brown, Permafrost Section, National Research Council of Canada, Ottawa)

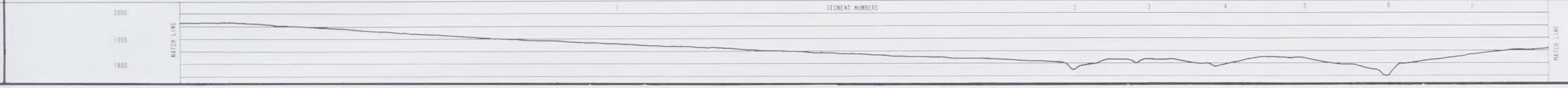
TERRAIN MAPPING BY:
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK.

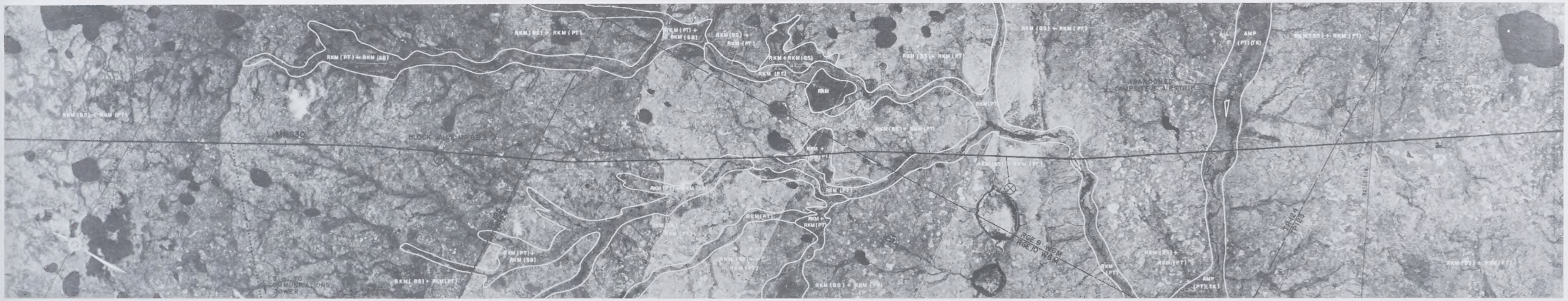
2A-0200-1001

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

REFERENCE DRAWINGS & NOTES	MATCH LINE 829.70	0300-6000				4-0210-1099		4-0210-1099		MATCH LINE 839.14
CHAINAGE (miles)	0.0		6.74	7.03	7.12	8.00	9.08	9.33		10.44
DESIGN DATA										

SEGMENT Nº	1	2	3	4	5	6	7
SEGMENT LENGTH	6.74	0.29	0.89	0.08	1.08	0.25	1.11
EROSION CONTROL	EC-1C	EC-8	EC-1C	N A	EC-1D	N A	EC-1C
BUOY	B-1	B-1	B-1	N A	B-1	N A	B-1
REVEG	III-V-2	III-V-4	III-V-2	III-V-6	III-V-2	III-V-6	III-V-2

FOOTAGE THIS SHEET

0 0.5 1.0
SCALE: (miles)

TERRAIN TYPING LEGEND

XVIII — ROUTE PARALLEL TO CHINCHAGA RIVER, NORTHERN ALBERTA PHYSIOGRAPHIC DIVISION

TERRAIN TYPES

AMP	Alluvial meander plain: organic silt and fine sand over thin, discontinuous coarse sand and/or gravel over till
GLB	Glacial lake basin: nearly level clay and silty clay plains
K	Kames: complexly sorted and stratified mounds of sand and/or gravel with minor silt, till, and boulders
OW	Outwash plain: channelled sand and/or gravel deposits
RKM	Ridge and knoll moraine: undulating to uniformly sloping ground moraine composed of lodgement till

FEATURES AND PHASES

Topographic features

CF	Crevasse fillings: narrow sublinear ridges of silt, sand, gravel, and ablation till
EVB	Eroded valley banks
OSF	Old slide features along river banks

Hydrographic features

MC	Meltwater channels
OX	Oxbow channels
SL	Slopewash features: fine subparallel drainage courses, often with associated surficial organic silt and sand slopewash deposits up to 4 ft thick over till

Shallow phases

AS	2 to 5 ft of loose gravelly-sand-silt ablation till over lodgement till
SV	5 to 15 ft (but generally less than 10 ft) surficial veneer. Note associated parent terrain types to determine stratigraphy, as [illegible]

Permafrost-affected peatland phases*

(Note: Peatland phases are shown along with the underlying mineral-soil terrain type.)

BS	Speckled bog pattern: elevated peat bogs, mainly peat plateaus with some palsas. White speckles are small interjacent thaw depressions (collapse scars, wet sedge meadows) resulting from local permafrost degradation, usually pre-conditioned by forest fires. Permafrost is usually absent in the white speckles. In GLB(BS) areas the peat is up to 8 ft but is usually less than 3 ft deep; in RKM(BS) areas the peat is 3 to 20 ft deep but commonly 5 to 15 ft in depressions and is usually less than 8 ft on slopes
FT	Generally an even gray peatland appearance, with some waterflow patterns. Locally, transitional to reticulated and ribbed fens. Expect peat 3 to 20 ft deep
FT-S	Spotty pattern of peat areas, with peat up to 15 ft deep in small areas that are 1 to 10 acres in size and cover 25 to 50% of the land surface
SB	Reticulated and ribbed fens. Water table at or above ground surface in hollows, with sparse trees on ridges (strings). Expect peat depths up to 12 ft
TK	Small thermokarst basins containing standing stagnant water. Occurs on peatlands where sporadic permafrost has degraded and shallow water fills small thaw basins

COMPLEXES

Complexes are shown where two terrain types are either too small or too complexly intermingled to separate at the scale of aerial photographs. Examples of percentages in combined terrain units follow:

RKM(BS)+RKM(SB) indicates over 50% BS and 25 to 50% SB
RKM(BS),some RKM(SB) indicates over 75% BS and less than 25% SB
RKM+RKM(BS)(FT) indicates that peat areas in the latter unit, RKM(BS)(FT), comprise more than 50% bog peat (BS) and 25 to 50% uniform-toned fen peat (FT)

---

*In the southern fringe of the discontinuous permafrost zone, permafrost occurs in scattered islands a few square feet to several acres in size and is confined to certain types of organic terrain, mainly elevated peat plateaus and occasional palsas (BS areas). The permafrost is generally not present in fen land (SB and FT areas). Other isolated occurrences of permafrost are associated with steeper north-facing slopes and areas of dense black spruce, where increased shading from summer thawing and reduced snow cover enhance permafrost formation and preservation (after Roger J.E. Brown, Permafrost Section, National Research Council of Canada, Ottawa)

TERRAIN MAPPING BY:
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK.

PIPELINE LEGEND

- CARRIER PIPE (line shown)
- CARRIER PIPE (line not shown)
- BERM BREAK
- SWAMP WEIGHT
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK (concrete)
- BLOCK VALVE
- TEST LEAD & DIRECTION OF WIRES
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- MILEPOST SIGN AIRCRAFT
- CHAINAGE EQUATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- MEASURING STATION
- COMMUNICATIONS TOWER
- SIDE VALVE
- WINTER TRAIL

PIPE DATA	QUAN.
CARRIER - 48" O.D. x 0.720" W.T. GRADE 70	
HEAVYWALL - 48" O.D. x 1.034" W.T. GRADE 65	
COATING DATA	

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQ'N Nº

BUOYANCY AND EROSION CONTROL LEGEND

B-0	No buoyancy
B-1	Potential buoyant conditions along segment
B-2	Potential buoyant conditions along portions of the segment
R.X.	Refer to river crossing drawing
EC-1	Average slope along segment less than 3° Erodible soil. Control measures required in low areas only
EC-2	Average slope along segment greater than 3° Erodible soil. Close spaced control measures required
EC-3	Average slope along segment less than 3° Non erodible soil. Minimal control measures required
EC-4	Average slope along segment greater than 3° Non erodible soil. Control measures required in low areas only
EC-5	Unstable water course. [illegible] required along segment
EC-6	Control measures required on steep sideslopes
EC-7	Control measures required at steep scarps
EC-8	Low lying sensitive areas. Measures to preserve micro drainage

GENERAL NOTES:

1. THE TERRAIN AND SOILS INFORMATION ON THIS DRAWING IS BASED ON AIRPHOTO INTERPRETATION AND DRILL HOLE DATA AS INDICATED. IT IS THE CONTRACTORS RESPONSIBILITY TO ASSURE HIMSELF OF THIS INFORMATION.
2. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
3. MINIMUM DEPTH OF COVER = 2.5 FEET

AERIAL PHOTOGRAPHY	
ROLL Nº	PHOTO Nºs
CR73174	84-91

OPERATING LICENCE Nº	
CONSTRUCTION PERMIT Nº	
MIN. TEST PRESSURE	2100 p.s.i.
MAX. OPERATING PRESSURE	1680 p.s.i.

Nº	DATE	REVISION	APP'D BY	APP'D BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA

ALBERTA

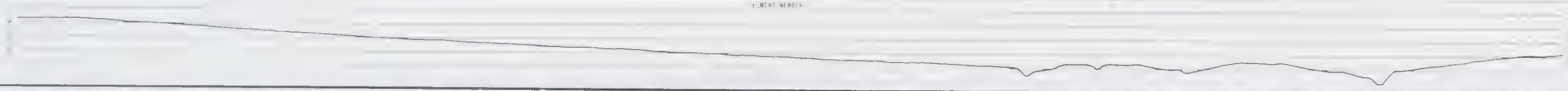
UPSTREAM M.P. 829
DOWNSTREAM M.P. 839

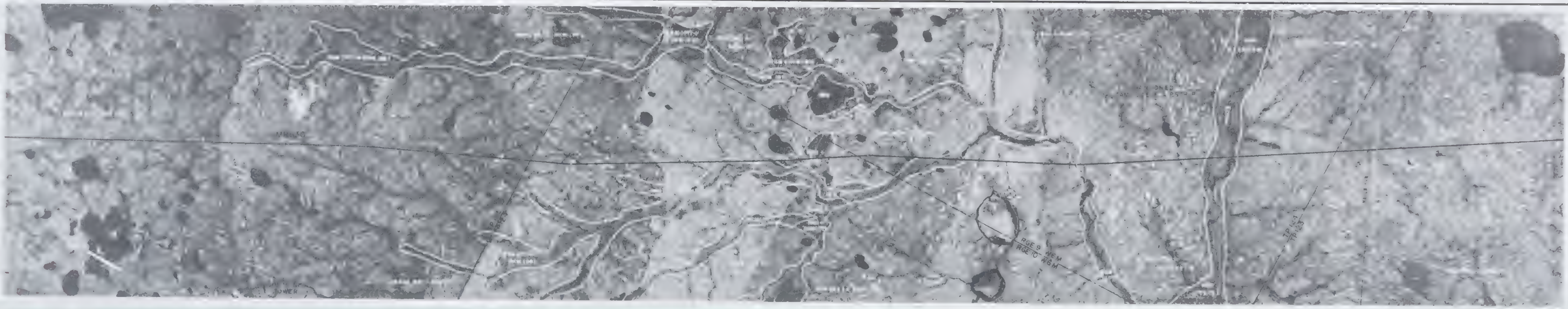
DRN BY	DATE	
CHKD BY		
APPRD BY		
SCALE: 1" = 2000'	SHEET 2 OF 60	2A-0200-1002

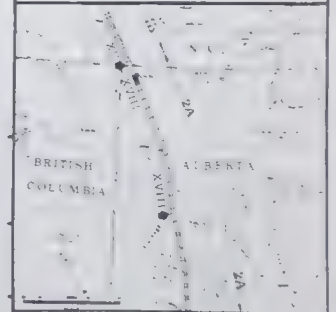
OWNERSHIP

DRILL HOLE DATA

PROFILE







2A-0200-1002

TERRAIN MAPPING BY

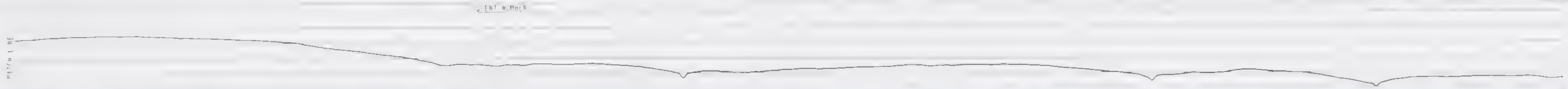
J D MOLLARD & ASSOCIATES LIMITED

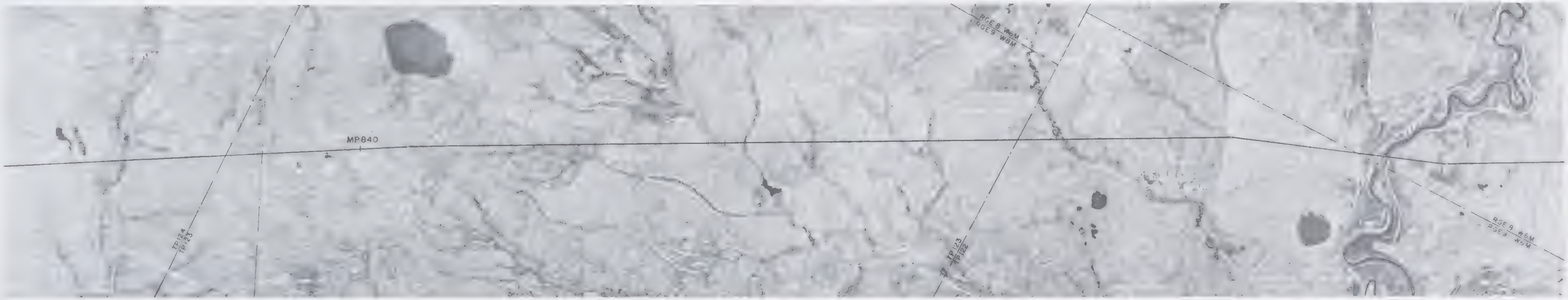
REGINA, SASK

OWNERSHIP

DRILL HOLE DATA

PROFILE





FOOTAGE THIS SHEET

CHAINAGE

DESIGN DATA

SEGMENT Nº

SEGMENT LENGTH

EROSION CONTROL

BUOY

REVEG

SCALE (miles)

PIPELINE LEGEND

HELIPAD
MEASURING STATION
COMMUNICATIONS TOWER
WATER TRAIL
TEST LEAD & DIRECTION OF WIRES

CARRIER 48 OD x 0.720 WT GRADE 70
HEAVYWALL 48 OD x 1.034" WT GRADE 65

GENERAL NOTES
1. THE TERRAIN AND SOILS INFORMATION ON THIS DRAWING … AIRPHOTO INTERPRETATION AND DRILL HOLE DATA … CONTRACTORS RESPONSIBILITY TO ASSURE HIMSELF …
2. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE
3. MINIMUM DEPTH OF COVER = 2.5 FEET

	PHOTO Nº
CR73174	92-99

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE	2100 p.s.i
MAX OPERATING PRESSURE	1680 p.s.i

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY, ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA
ALBERTA

UPSTREAM M.P. 835 DOWNSTREAM M.P.

APPD BY

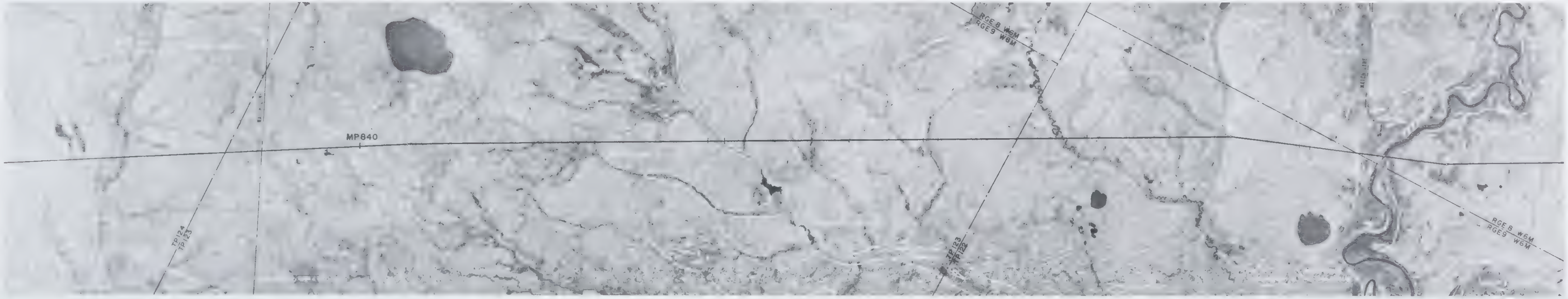
SCALE 1:2000
SHEET 3 OF 60
2A-0200-1003

TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK

OWNERSHIP

DRILL HOLE DATA

PROFILE



Scattered black spruce [illegible] peat deposits
Sphagnum bog in thaw depressions
Sedge fen in drainageways and thaw depressions

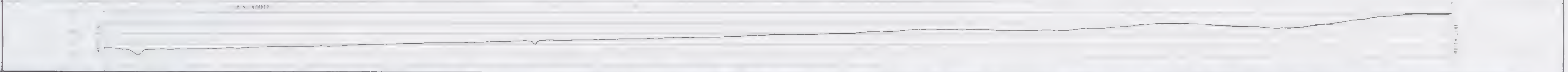
TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK.

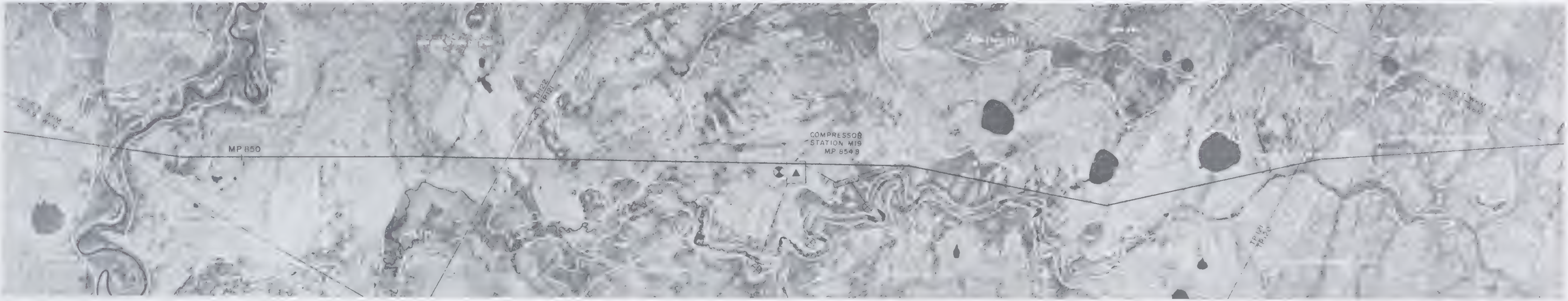
2A-0200-1003

OWNERSHIP

DRILL HOLE DATA

PROFILE





PIPELINE LEGEND

COMPRESSOR STATION
MEASURING STATION
COMMUNICATIONS TOWER

PIPE DATA	
CARRIER 48 OD x 0.720 WT GRADE 70	
HEAVYWALL 48 OD x 1.034" WT GRADE 65	

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQN Nº

BUOYANCY AND EROSION CONTROL LEGEND

GENERAL NOTES
1. THE TERRAIN AND SOILS INFORMATION ON THIS DRAWING IS BASED ON AIRPHOTO INTERPRETATION AND DRILL HOLE DATA AS INDICATED. IT IS THE CONTRACTORS RESPONSIBILITY TO ASSURE HIMSELF OF THIS INFORMATION.
2. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
3. MINIMUM DEPTH OF COVER - 2.5 FEET

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nº
CR77-74	100 93

OPERATING PERMIT Nº
CONSTRUCTION PERMIT Nº
MIN TEST PRESSURE 2100 psi
MAX OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA
ALBERTA

UPSTREAM M.P. 849
DOWNSTREAM M.P. 86

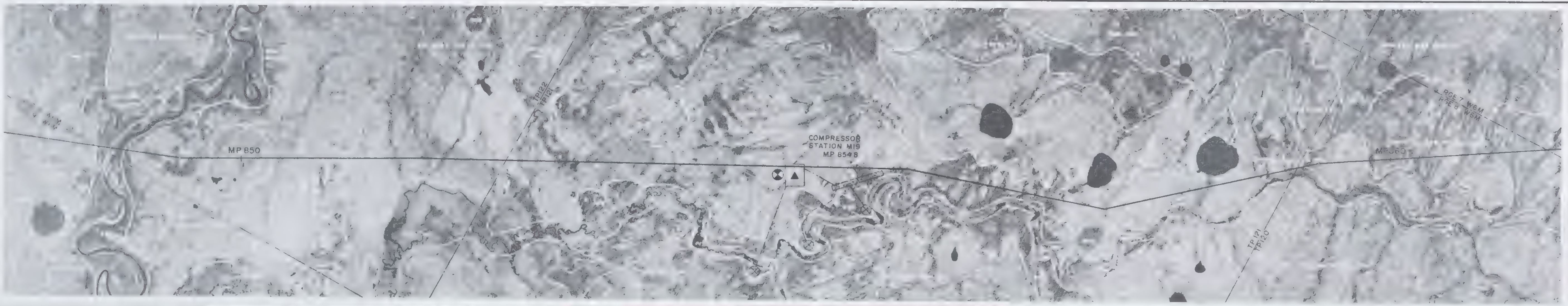
4 50
2A-0200-1004

TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK.

OWNERSHIP

DRILL HOLE DATA

PROFILE



[illegible]

[illegible]

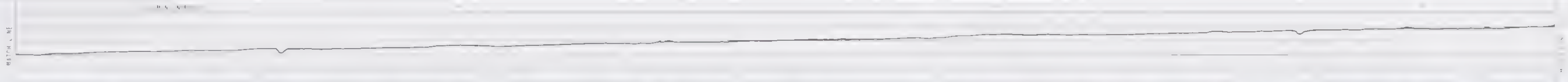
[illegible]

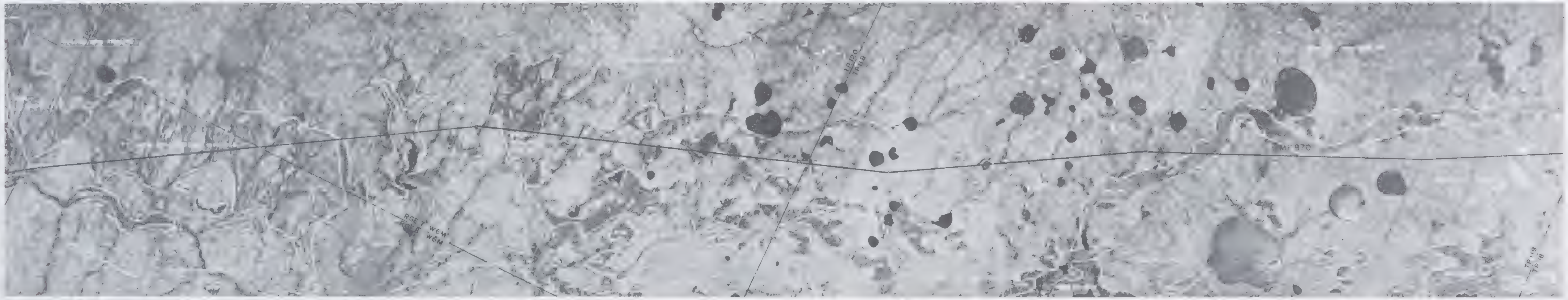
TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK.

2A-0200-1004

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

FOOTAGE THIS SHEET

REVS

SCALE - MILES

PIPELINE LEGEND

- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- TEST LEAD & DIRECTION OF WIRES
- RIVER WEIGHT
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- CHAINAGE EQUATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- HELIPAD
- METERING STATION
- COMMUNICATIONS TOWER
- WINTER TRAIL

PIPE	
CARRIER - 48 OD x 0.720 WT GRADE	
HEAVYWALL - 48" OD x 1.034" WT GRADE 65	

MISCELLANEOUS MATERIAL

GENERAL NOTES

1. THE TERRAIN [illegible] INFORMATION ON THIS DRAWING IS BASED ON AIRPHOTO INTERPRETATION AND DRILL HOLE DATA AS INDICATED. IT IS THE CONTRACTORS RESPONSIBILITY TO ASSURE HIMSELF OF [illegible]
2. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
3. MINIMUM DEPTH OF COVER [illegible] FEET

AERIAL PHOTOGRAPHY

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE [illegible]

MAX OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA
ALBERTA

UPSTREAM M.P. 86
DOWNSTREAM M.P. 87

5 - 80

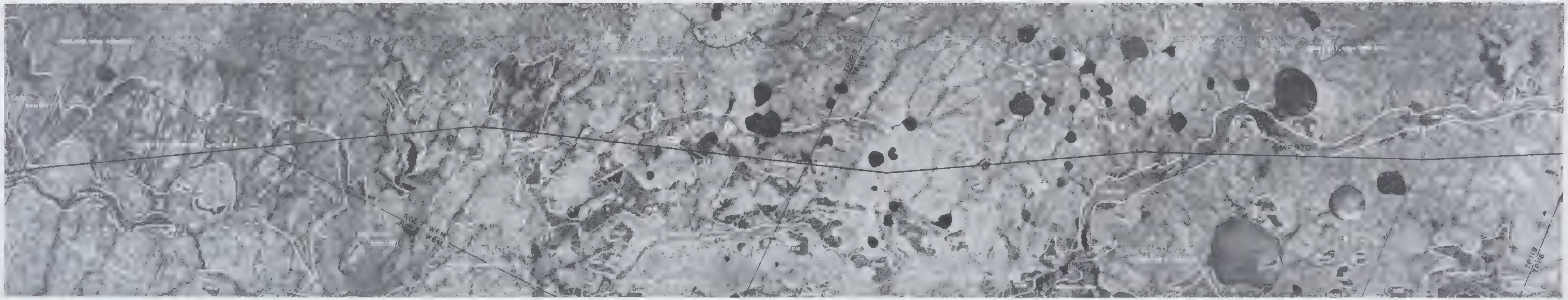
2A-0200-1005

TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA SASK.

OWNERSHIP

DRILL HOLE DATA

PROFILE



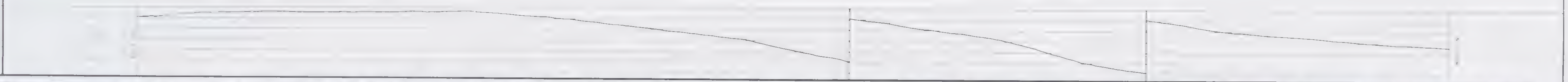
TERRAIN MAPPING BY
J D MOLLARD & ASSOCIATES LIMITED
REGINA, SASK

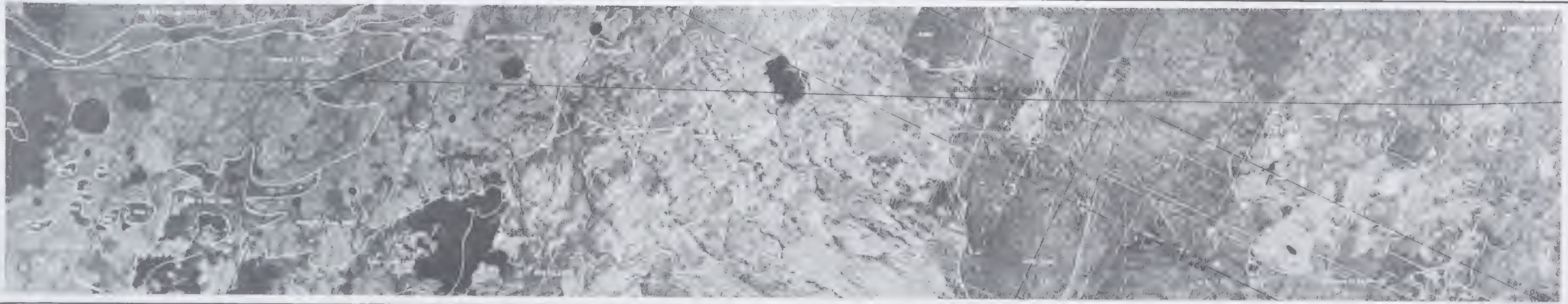
2A-0200-1005

OWNERSHIP

DRILL HOLE DATA

PROFILE





FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

- BENCH MARK
- SWAMP WEIGHT
- RIVER WEIGHT
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- BLOCK VALVE
- TEST LEAD & DIRECTION OF WIRES
- POINT OF INTERSECTION
- WARNING SIGN
- WARNING SIGN AIRCRAFT
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- MEASURING STATION
- WINTER TRAIL

PIPE DATA	QUAN
CARRIER - 48" OD x 0.720" WT GRADE 70	
HEAVYWALL 48" OD x 1.034" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQN Nº

BUOYANCY AND EROSION CONTROL LEGEND

B 0 No buoyancy
B 1 Potential buoyant land from a bog segment
B 2 Potential buoyant land from a bog portion of the segment
[illegible]

GENERAL NOTES
1. THE TERRAIN AND SOILS INFORMATION ON THIS DRAWING IS BASED ON AIRPHOTO INTERPRETATION AND DRILL HOLE DATA AS INDICATED. IT IS THE CONTRACTORS RESPONSIBILITY TO ASSURE HIMSELF OF THIS INFORMATION.
2. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
3. MINIMUM DEPTH OF COVER = 2.5 FEET.

AERIAL PHOTOGRAPHY	
ROLL Nº	PHOTO Nº
CR73174	159 - 174

OPERATING LICENCE Nº	
CONSTRUCTION PERMIT Nº	
MIN TEST PRESSURE	2100 psi
MAX OPERATING PRESSURE	1680 psi

Nº	DATE	REVISION	APPD BY	APPD BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA
ALBERTA

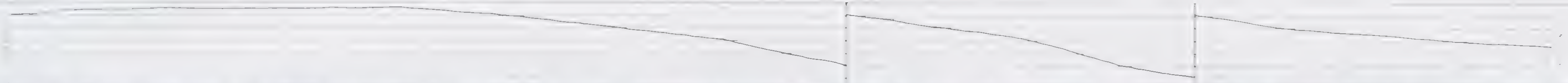
UPSTREAM M.P. 871 DOWNSTREAM M.P. 881

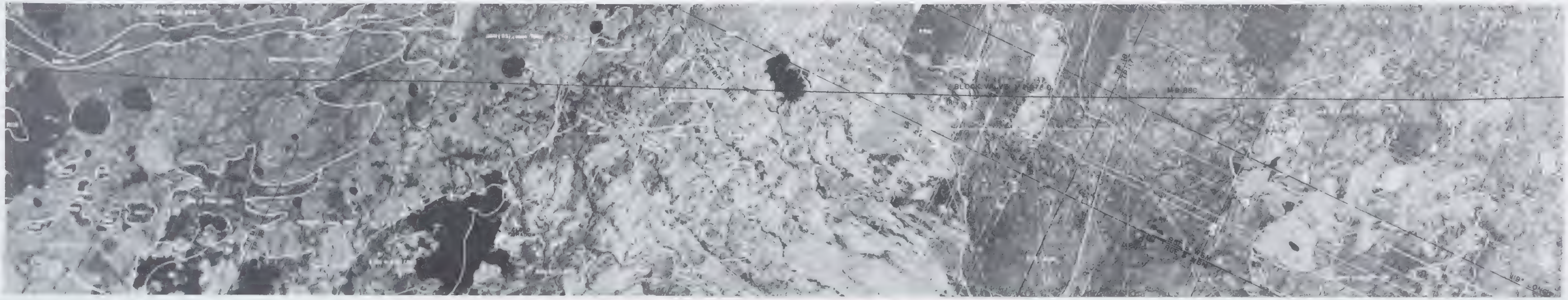
DRN BY
CHKD BY Jan 18/7
APPD BY Jan 2/74
DATE
SCALE 1" = 2000'
SHEET 6 OF 50
2A-0200-1006

TERRAIN MAPPING BY
J D MOLLARD & ASSOCIATES LIMITED
REGINA SASK

DRILL HOLE DATA

PROFILE



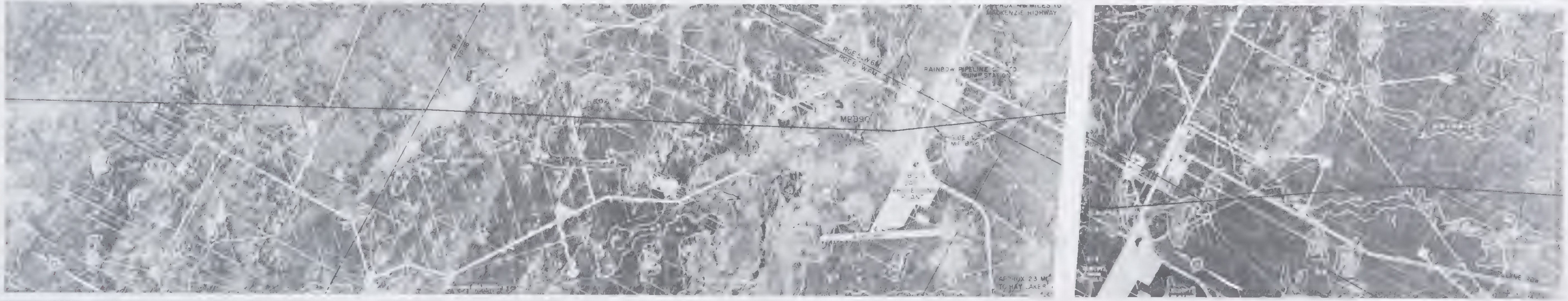


2A-0200-1006

TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK.

DRILL HOLE DATA

PROFILE


RGE 5 W6M
RGE 6 W6M
APPROX 48 MILES TO MACKENZIE HIGHWAY
RAINBOW PIPELINE CO LTD PUMP STATION
MP890
APPROX 23 MI TO HAY LAKE

MATCH LINE

SCALE (miles)

PIPELINE LEGEND

HELIPAD

MEASURING STATION

PIPE DATA	
CARRIER - 48" OD x 0.720" WT GRADE 70	
HEAVYWALL - 48 OD x 1.034" WT GRADE 65	

COATING DATA

BUOYANCY AND EROSION CONTROL LEGEND

GENERAL NOTES

THE TERRAIN AND SOILS INFORMATION ON THIS DRAWING IS BASED ON AIRPHOTO INTERPRETATION AND DRILL HOLE DATA AS INDICATED. IT IS THE CONTRACTORS RESPONSIBILITY TO ASSURE HIMSELF OF THIS INFORMATION.

ALIGNMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE

MINIMUM DEPTH OF COVER

AERIAL PHOTOGRAPHY

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE 2000 psi

MAX OPERATING PRESSURE 1680 psi

Nº | DATE | REVISION | APPRD BY | APPRD BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA

ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA
ALBERTA

UPSTREAM M.P. 883 DOWNSTREAM M.P. 934

CHKD BY Jan 18/74

APPD BY 22/74

SHEET 7 OF 50

2A-0200-1007

TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA SASK.

OWNERSHIP

DRILL HOLE DATA

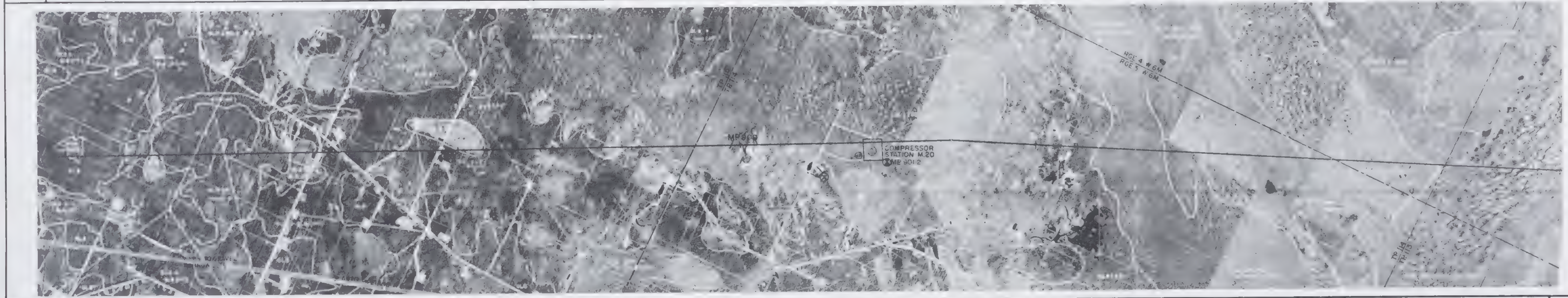
TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK.

2A-0200-1007

OWNERSHIP

DRILL HOLE DATA

PROFILE



FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

BERM BREAK
SWAMP WEIGHT
RIVER WEIGHT
FROST ANCHOR
DRILL HOLE
WARNING SIGN
CAMP SITE
STAGING AREA & CAMP SITE
HELIPAD
MEASURING STATION
COMMUNICATIONS TOWER

PIPE DATA	
CARRIER 48 OD x 0.720 WT GRADE 70	
HEAVYWALL - 48 OD x 1.034" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

BUOYANCY AND EROSION CONTROL LEGEND

GENERAL NOTES

THE TERRAIN AND SOILS INFORMATION ON THIS DRAWING IS BASED ON [illegible] ATION AND DRILL HOLE DATA AS INDICATED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSURE HIMSELF OF THIS INFORMATION.

MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE

MINIMUM DEPTH OF COVER = 2.5 FEET

AERIAL PHOTOGRAPHY

CONSTRUCTION PERMIT NO.

MIN. TEST PRESSURE	
MAX. OPERATING PRESSURE	1680 psi

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA

ALBERTA

UPSTREAM M.P. 794
DOWNSTREAM M.P.

SCALE 1:2000

SHEET 8 OF 50

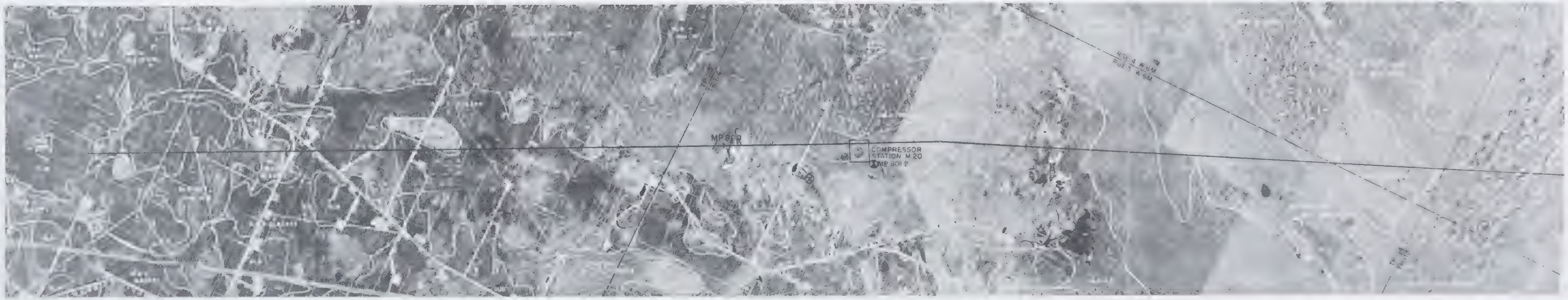
2A-0200-1008

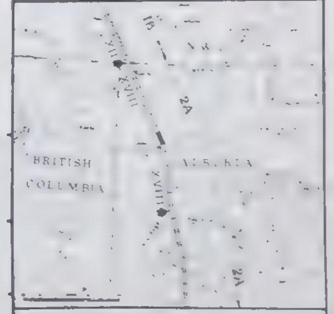
TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK.

OWNERSHIP

DRILL HOLE DATA

PROFILE





TERRAIN MAPPING

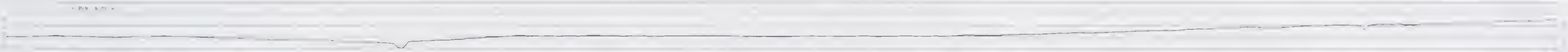
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK.

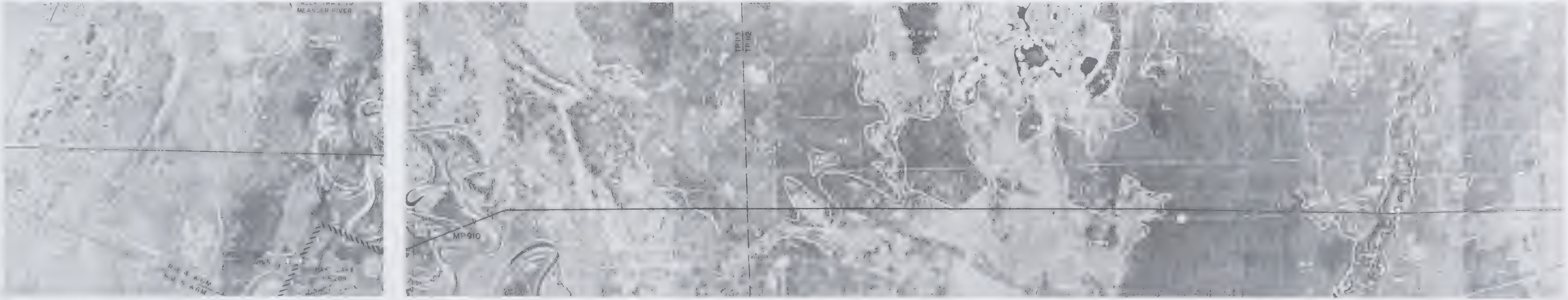
2A-0200-1008

OWNERSHIP

DRILL HOLE DATA

GRADE





REFERENCE DRAWING & NOTES

MATCH LINE

4 0100-0003

MATCH LINE

MATCH LINE

4 0210-1099

4 0210-1009

FOOTAGE THIS SHEET

TERRAIN DATA

PIPELINE LEGEND

DRILL HOLE LOCATION
TEMPORARY ROAD
FROST ANCHOR
COMPRESSOR STATION
HELIPAD
SCREW ANCHOR
MEASURING STATION
HEAVY WALL PIPE
STORAGE OR STAGING AREA
SIDE VALVE
CASING PIPE
CAMP SITE
WINTER TRAIL
ANCHOR BLOCK
STAGING AREA & CAMP SITE
BLOCK VALVE
BORROW SITE
TEST LEAD & DIRECTION
WHARF

PIPE DATA	QUAN
HEAVYWALL - 48 OD x 1.034" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

BUOYANCY AND EROSION CONTROL LEGEND

GENERAL NOTES

CONTRACTORS RESPONSIBILITY TO ASSURE HIMSELF OF THIS INFORMATION

2 SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE

3 MINIMUM DEPTH OF COVER = 2.5 FEET

AERIAL PHOTOGRAPHY	
ROLL Nº	PHOTO Nºs
CR-3-74	69-232

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE 2100 p.s.i.

MAX OPERATING PRESSURE 1680 p.s.i.

REVISION

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA

ALBERTA

UPSTREAM M.P.

DOWNSTREAM M.P.

DRN. BY

DATE

CHK'D BY

18/74

APP'D BY

12/74

SCALE 1" = 1000'

SHEET 9 OF 50

2A-0200-1009

TERRAIN MAPPING BY

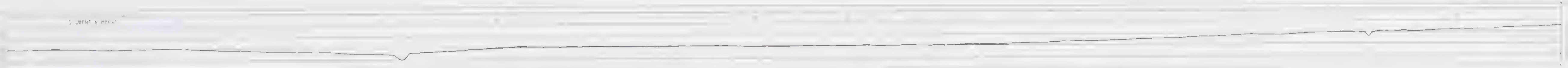
J.O. MOLLARD & ASSOCIATES LIMITED

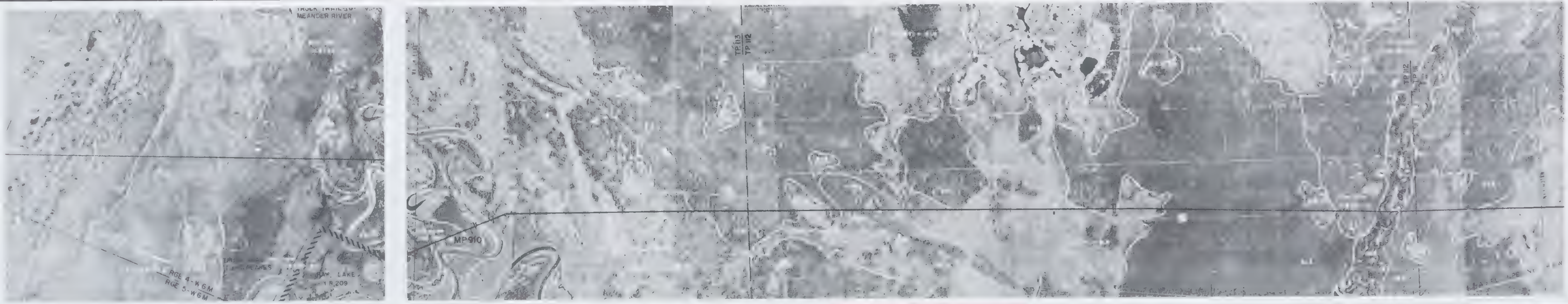
REGINA, SASK

OWNERSHIP

DRILL HOLE DATA

PROFILE





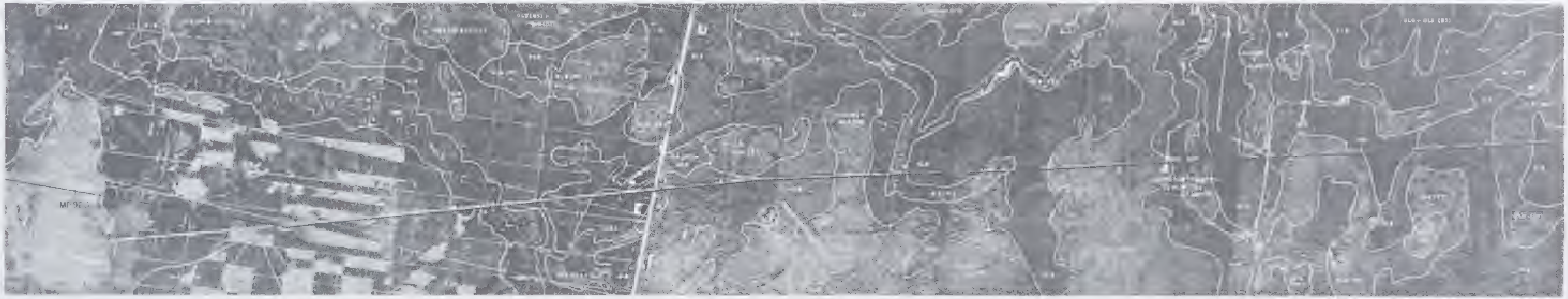
2A-0200-1009

TERRAIN MAPPING BY
J D MOLLARD & ASSOCIATES LIMITED
REGINA, SASK

OWNERSHIP

DRILL HOLE DATA

PROFILE



FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

CARRIER 48" OD x 0.720" WT GRADE 70
HEAVYWALL 48" OD x 1.034" WT GRADE 65

COATING DATA

BUOYANCY AND EROSION CONTROL LEGEND

MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE

DEPTH OF COVER = 2.5 FEET

AERIAL PHOTOGRAPH

OPERATING PERMIT No.

CONSTRUCTION PERMIT No.

MIN TEST PRESSURE

MAX OPERATING PRESSURE

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

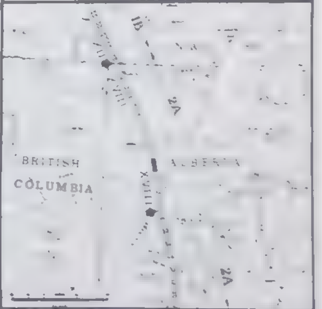
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA
ALBERTA

UPSTREAM M.P. DOWNSTREAM M.P.

CHKD BY Jan 18/7
APPD BY Jan 22/7
SCALE 1" = 2000'
SHEET 10 OF 60

2A-0200-1010

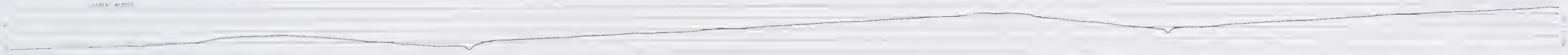


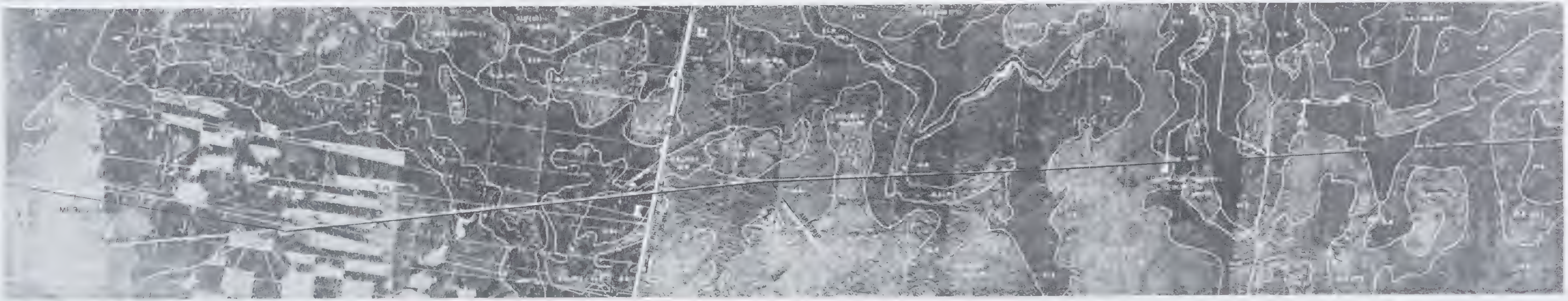
TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK.

OWNERSHIP

DRILL HOLE DATA

PROFILE





ENVIRONMENTAL DATA

VEGETATION

Willow sedge fen	White spruce feathermoss Trembling aspen willow, rose		Trembling aspen willow, rose on better drained areas Scattered black spruce appleberry/lichen on peat deposits Willow in drainageways

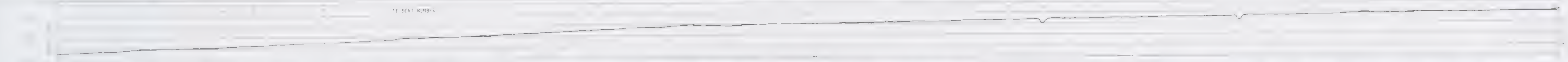
TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK

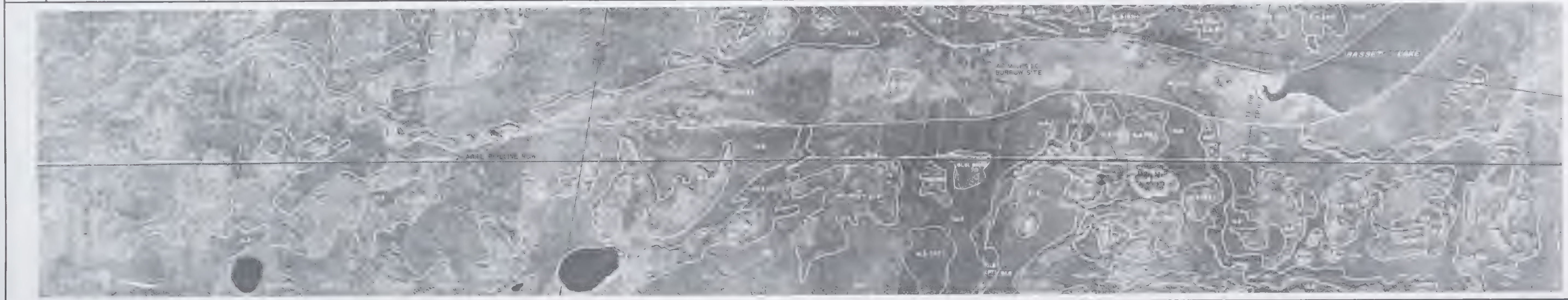
2A-0200-1010

OWNERSHIP

DRILL HOLE DATA

PROFILE





REFERENCE DRAWING

CONSTRUCTION DATA

FOOTAGE THIS SHEET

EC 1D | EC 1D | EC 1D | EC 1D | EC 1D | EC 1D | EC 1 | EC 1C | EC 1D | EC 1D
B 1 | B 0 | B 1 | B 0 | B 1 | B 0 | B 1 | B 0 | B 2 | B 0

SCALE: MILES

PIPELINE LEGEND

- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- MILEPOST SIGN AIRCRAFT
- CHAINAGE EQUATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- MEASURING STATION
- COMMUNICATIONS TOWER
- SIDE VALVE
- WINTER TRAIL
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK

PIPE DATA	QUAN
CARRIER 48" OD x 0.720" WT GRADE 70	
HEAVYWALL - 48" OD x 1.034" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQ'N Nº

BUOYANCY AND EROSION CONTROL LEGEND

- B 0 No Buoyancy
- B 1 Potential buoyant conditions along segment
- B 2 Potential buoyant conditions along portions of the segment
- N A Refer to [illegible]
- EC Average slope along segment less than 3° Erodible [illegible]
- EC-2 Average slope along segment greater than 3° Erodible [illegible] Close spaced control measures required
- EC 3 Average slope along segment less than 3° Non erodible [illegible] Minimum control measures required
- EC 6 Control measures required on steep segments
- EC 7 Control measures required at steep [illegible]
- EC 9 [illegible] Apply so to preserve [illegible] drainage

GENERAL NOTES

1. THE TERRAIN AND SOILS INFORMATION ON THIS DRAWING IS BASED ON AIRPHOTO INTERPRETATION AND DRILL HOLE DATA AS INDICATED. IT IS THE CONTRACTORS RESPONSIBILITY TO ASSURE HIMSELF OF THIS INFORMATION.
2. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
3. MINIMUM DEPTH OF COVER = 2.5 FEET

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CR73189	100 11

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE	2100 psi
MAX OPERATING PRESSURE	1680 psi

Nº	DATE	REVISION	APPRO BY	APPRO BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA
ALBERTA

UPSTREAM M.P. DOWNSTREAM M.P. 316

DATE

APPRO BY

Jan 22/74

SCALE 1" = 2000'

SHEET 11 of 50

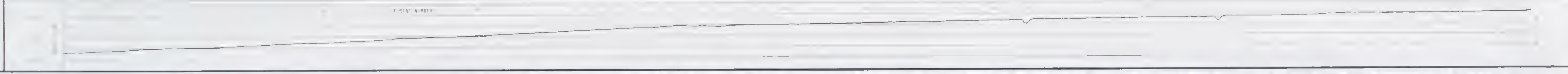
2A-0200-1011

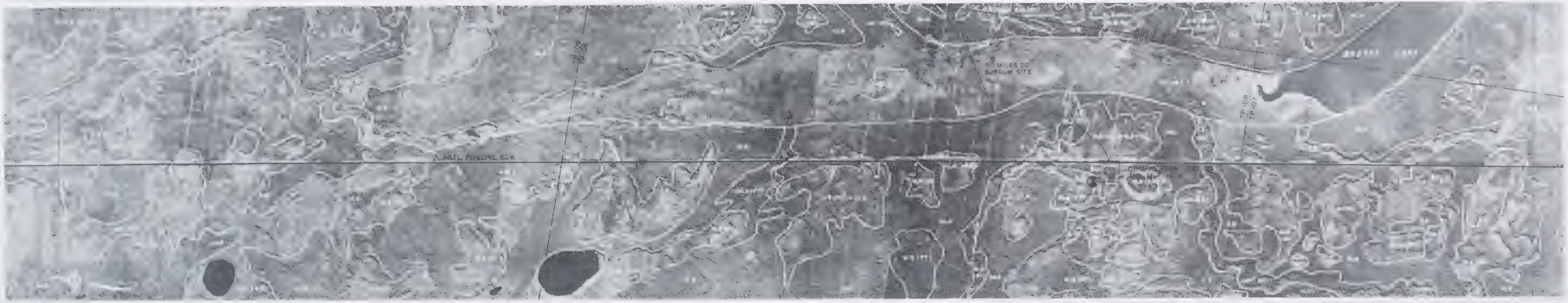
TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK

OWNERSHIP

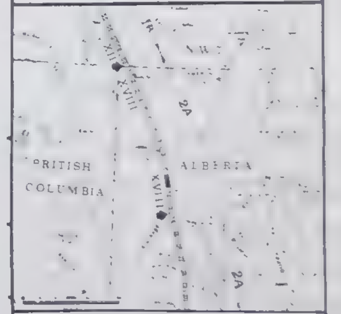
DRILL HOLE DATA

PROFILE





Trembling aspen with [illegible] rose feathermoss on better drained areas.
Black spruce feathermoss in depressions.
Scattered black spruce [illegible] lichen or peat [illegible]
[illegible]



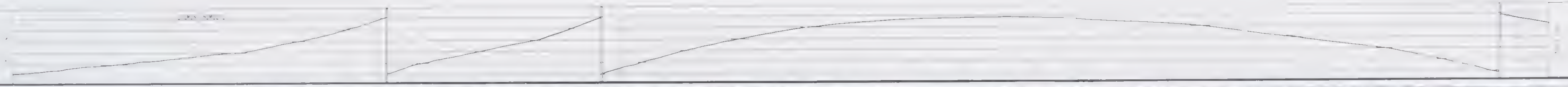
TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK

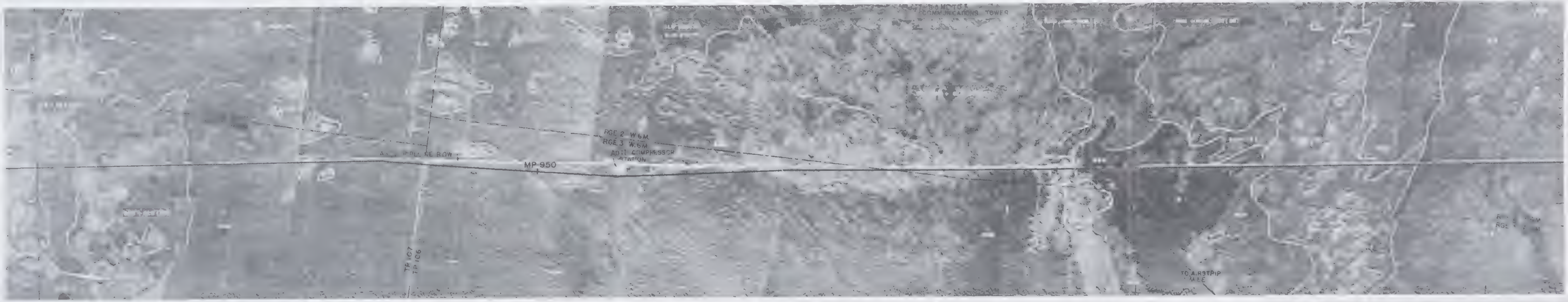
2A-0200-1011

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

- CARRIER PIPE
- CARRIER PIPE
- BERM BREAK
- SWAMP WEIGHT
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- TEST LEAD & DIRECTION OF WIRES
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- MILEPOST SIGN AIRCRAFT
- CHAINAGE EQUATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- MEASURING STATION
- COMMUNICATIONS TOWER
- SIDE VALVE
- WINTER TRAIL

PIPE DATA	QUAN
CARRIER - 48" OD x 0.720" WT GRADE 70	
HEAVYWALL - 48" OD x 1.034" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQ'N Nº

BUOYANCY AND EROSION CONTROL LEGEND

B 0	No buoyancy
B 1	Potential buoyant conditions along segment
B 2	Potential buoyant conditions along portions of the segment
W A	Refer to river crossing drawing
EC 1	Average slope along segment less than 3° Erodible soil. [illegible]
EC-2	Average slope along segment greater than 3° Erodible soil. Close spaced control measures required
EC 3	Average slope along segment less than 3° Non erodible [illegible]
EC 4	Average slope along segment greater than 3° Non erodible soil. Control measures required on steep areas only
[illegible]	[illegible]
EC 6	Control measures required on steep sideslopes
EC 7	Control measures required at steep scarps
EC 8	[illegible]

GENERAL NOTES

1. THE TERRAIN AND SOILS INFORMATION ON THIS DRAWING IS BASED ON AIRPHOTO INTERPRETATION AND DRILL HOLE DATA AS INDICATED. IT IS THE CONTRACTORS RESPONSIBILITY TO ASSURE HIMSELF OF THIS INFORMATION.
2. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE
3. MINIMUM DEPTH OF COVER = 2.5 FEET

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CR73109	

OPERATING LICENCE Nº	
CONSTRUCTION PERMIT Nº	
MIN TEST PRESSURE	2100 psi
MAX OPERATING PRESSURE	1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA

ALBERTA

UPSTREAM M.P. 946
DOWNSTREAM M.P.

DRN BY	DATE
CHKD BY	Jan 10/74
APPRD BY	Nov 22/74

SCALE 1" = 2000'
SHEET 12 OF 50

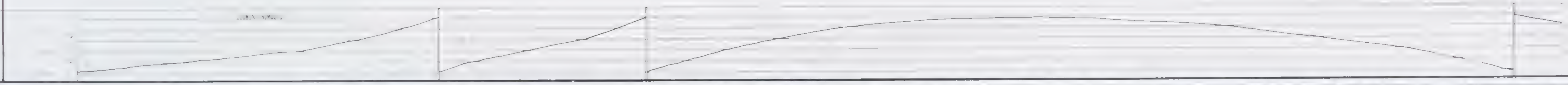
2A-0200-1012

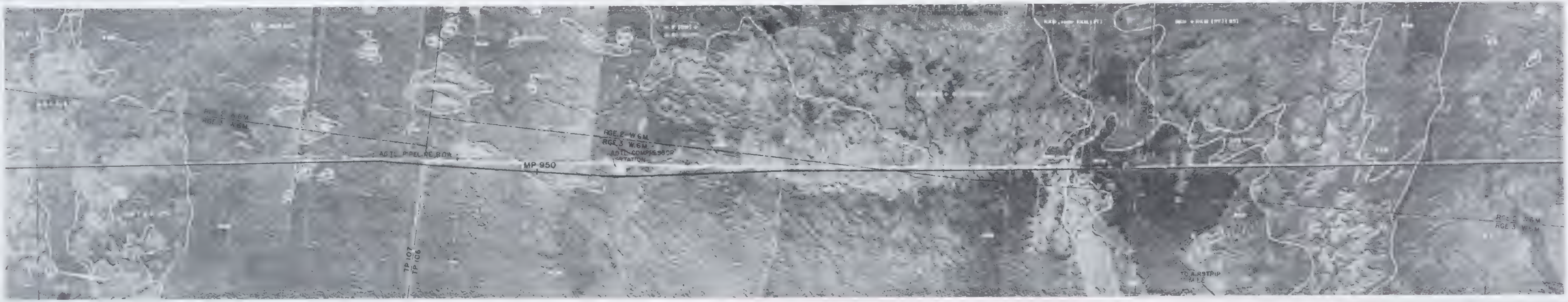
TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK

OWNERSHIP

DRILL HOLE DATA

PROFILE





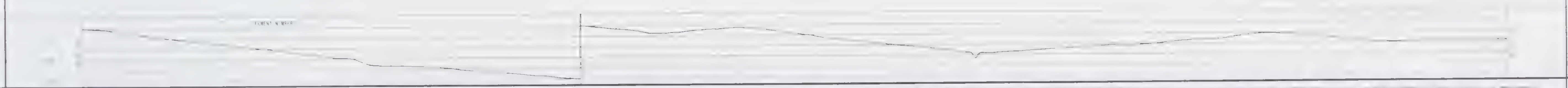
TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK.

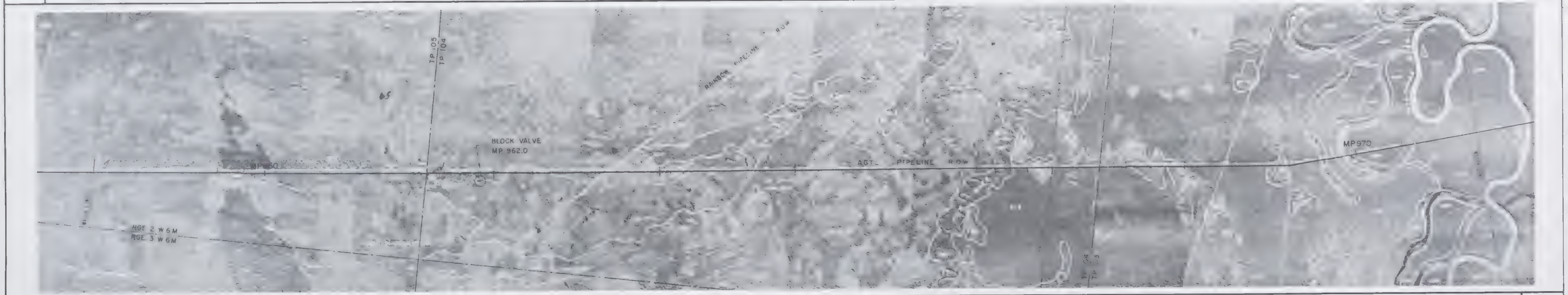
2A-0200-1012

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

FOOTAGE THIS SHEET

SEGMENT					(×)	6	7	8	9	10	11	12	13				17	18	19	20
SEGMENT LENGTH	1.15	0.24	1.68	0.15	0.43	0.37														
EROSION CONTROL	EC 10	EC 10	EC 10	EC 10	EC 10	EC 10	EC 10	EC 10	EC 10	EC 10	EC 10	N A	EC 10	EC 10	EC 10	EC 10	EC 10	EC 20	EC 8	EC 10
			B 0	B 1	B 0	B 2	B 0	B 2	B 0	B 2	B 0	N A	B 0	B 1	B 0	B 1	B 0	B 0	B 1	B 0
							Ⅲ V 2					Ⅲ V 6		Ⅲ V-2					Ⅲ V 4	

SCALE (miles)

5

PIPELINE LEGEND

POINT OF INTERSECTION
DRILL HOLE LOCATION
PERMANENT ROAD
TEMPORARY ROAD
HELIPAD
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
BORROW SITE
WHARF
WINTER TRAIL

PIPE DATA	
CARRIER 48" OD x 0.720" WT GRADE 70	
HEAVYWALL 48" OD x 1.034" WT GRADE 65	

COATING DATA

BUOYANCY AND EROSION CONTROL LEGEND

GENERAL NOTES
1. THE TERRAIN AND SOILS INFORMATION ON THIS DRAWING IS ... CONTRACTORS RESPONSIBILITY TO ASSURE HIMSELF OF THIS INFORMATION
2. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE
3. MINIMUM DEPTH OF COVER = 2.5 FEET

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
	22 132

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE	2100 psi
MAX OPERATING PRESSURE	1680 psi

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA
ALBERTA

UPSTREAM M.P. 958
DOWNSTREAM M.P.

SCALE 1 = 2000
SHEET 13 OF 60

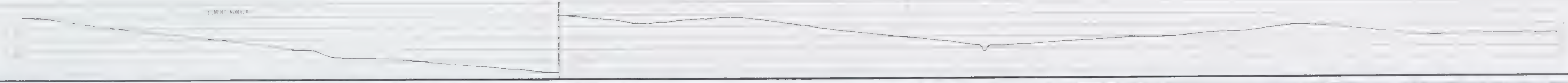
2A-0200-1013

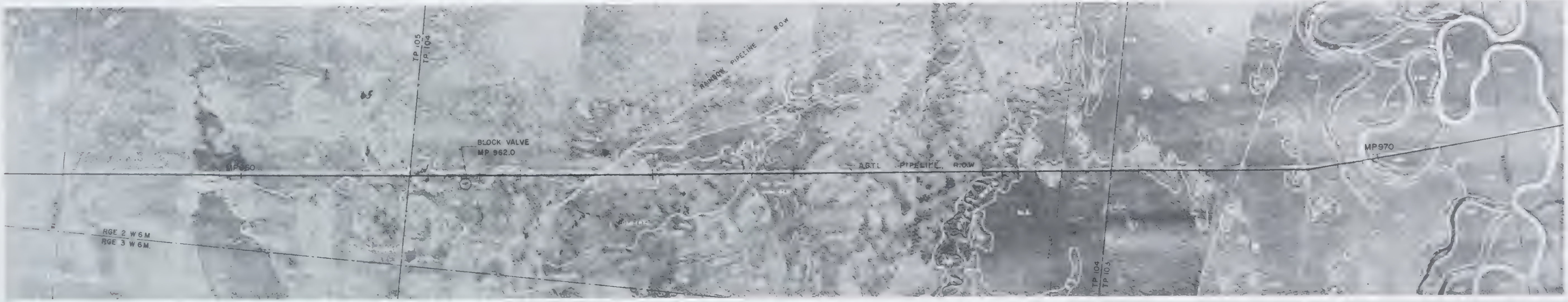
TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK.

OWNERSHIP

DRILL HOLE DATA

PROFILE



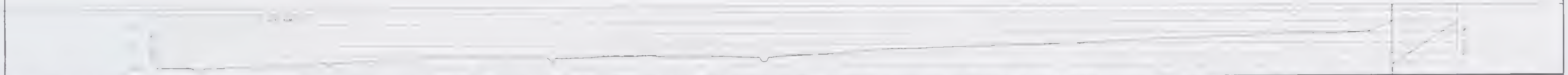


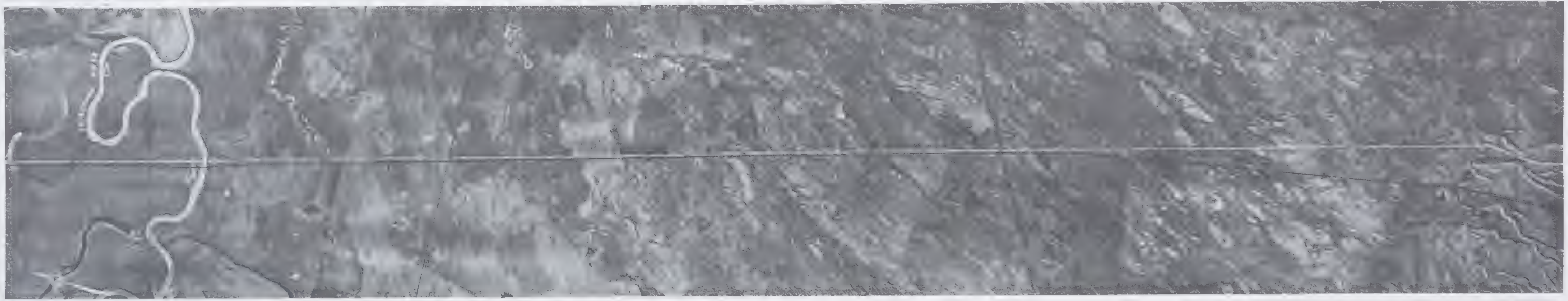
TERRAIN MAPPING BY
J D MOLLARD & ASSOCIATES LIMITED
REGINA, SASK

2A-0200-1013

OWNERSHIP

DRILL HOLE DATA





CONSTRUCTION DATA

FOOTAGE THIS SHEET

MATCH LINE

0 0.5

SCALE MILES

PIPELINE LEGEND

- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- CHAINAGE EQUATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- WHARF
- FROST ANCHOR
- HEAVY WALL PIPE
- TEST LEAD & [illegible]
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- COMMUNICATIONS TOWER
- WINTER TRAIL

PIPE DATA	QUAN
CARRIER - 48" O.D. x 0.720" W.T. GRADE 70	
HEAVYWALL - 48" O.D. x 1.034" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES

1. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CR73171	1 - 10

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MAX. OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. 97 DOWNSTREAM M.P. 383

DRN BY | DATE

APPR. BY

SCALE 1:2000

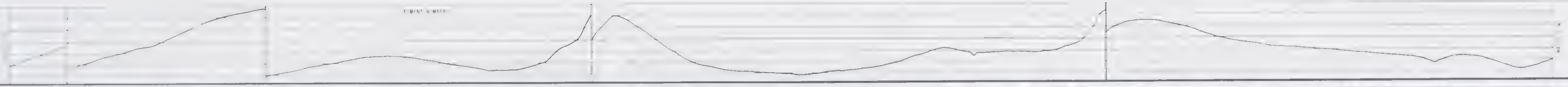
SHEET 14 OF 50

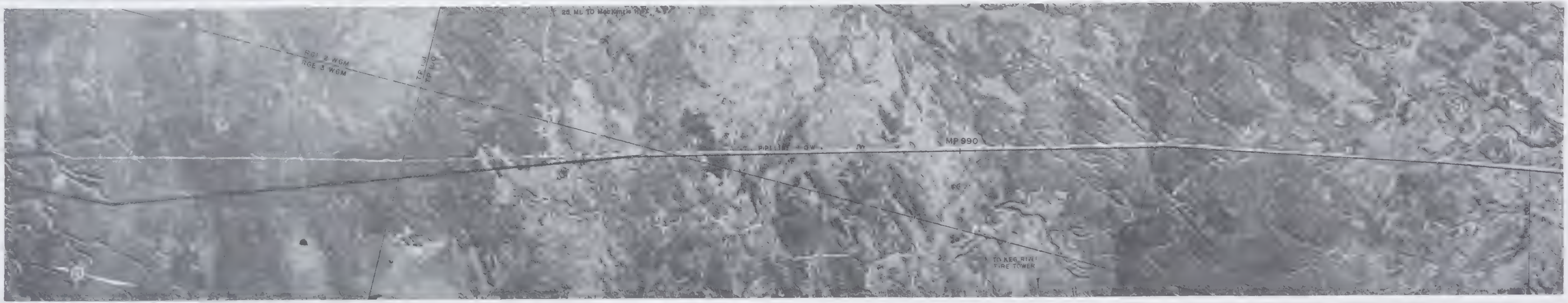
2A-0200-1014

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

REFERENCE DRAWING & NOTES

MATCH LINE 982.79

MATCH LINE 994.47

FOOTAGE THIS SHEET

0 0.5

SCALE (miles)

PIPELINE LEGEND

- CARRIER PIPE
- CARRIER PIPE
- BERM BREAK
- SWAMP WEIGHT
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- TEST LEAD & DIRECTION OF WIRES
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- MILEPOST SIGN AIRCRAFT
- CHAINAGE EQUATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD

PIPE DATA	QUAN
CARRIER - 48" O.D. x 0.720" W.T. GRADE 70	
HEAVYWALL - 48" O.D. x 1.034" W.T. GRADE 65	
COATING DATA	

QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES

SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE

2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

B-0 No buoyancy

B-1 Potential buoyant conditions along segment

B-2 Potential buoyant conditions along portions of the segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CR73171	11-20

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE 2100 psi

MAX OPERATING PRESSURE 680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

Northern Engineering Services Company Limited

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. 983

DOWNSTREAM M.P. 994

DATE

Jan 22/74

SCALE 1" = 2000

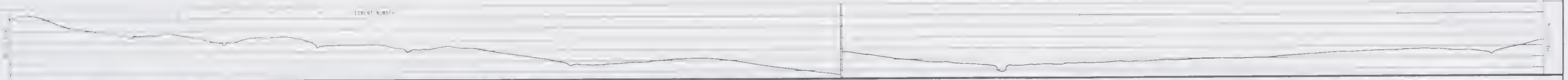
SHEET 15 OF 50

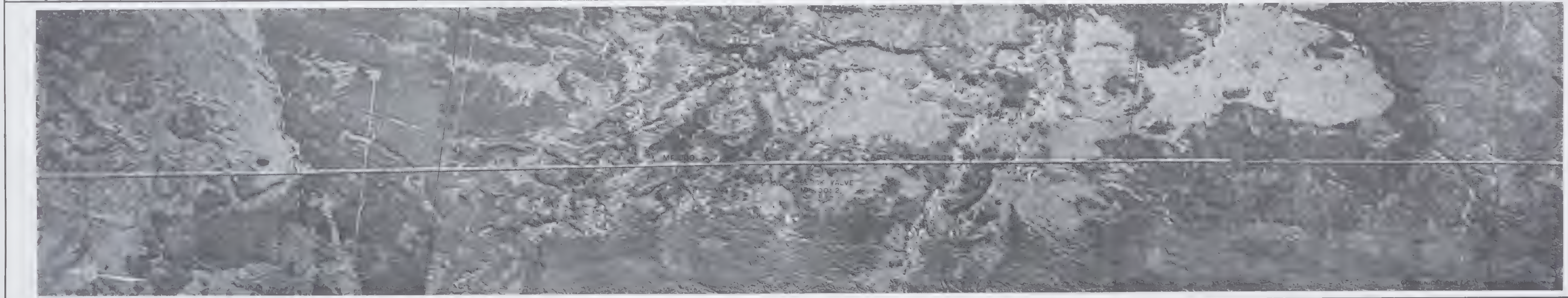
2A-0200-1015

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

REFERENCE DRAWINGS & NOTES	MATCH LINE 994 47 · 4 0210 099 · 0300 6000 · 4 0210 1099 · MATCH LINE 1007 65
CHAINAGE (miles)	
DESIGN DATA	

FOOTAGE THIS SHEET

0 0.5 1
SCALE miles

PIPELINE LEGEND

- CARRIER PIPE (cover shown)
- CARRIER PIPE (berm cover)
- BERM BREAK
- SWAMP WEIGHT
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- TEST LEAD & DIRECTION OF WIRES
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- CHAINAGE EQUATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- METERING STATION
- COMMUNICATIONS TOWER
- SIDE VALVE
- WINTER TRAIL

PIPE DATA	PLAN
CARRIER - 48" OD x 0.720" W.T. GRADE 70	
HEAVYWALL - 48" OD x 1.034" W.T. GRADE 65	

MISCELLANEOUS MATERIAL		
PLAN	DESCRIPTION	REF. DWG. Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY	
ROLL Nº	PHOTO Nºs
CR73171	21 30

OPERATING LICENCE Nº	
CONSTRUCTION PERMIT Nº	
MIN. TEST PRESSURE	2100 psi
MAX. OPERATING PRESSURE	1680 psi

Nº	DATE	REVISION	APPRD BY	APPRD BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

UPSTREAM M.P. 994
DOWNSTREAM M.P. 1L.8

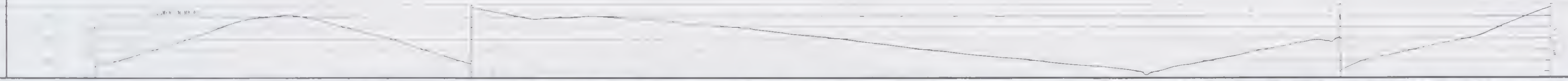
DN. BY	DATE
CHKD. BY	Jan 18/74
APPR. BY	Jan 22/74

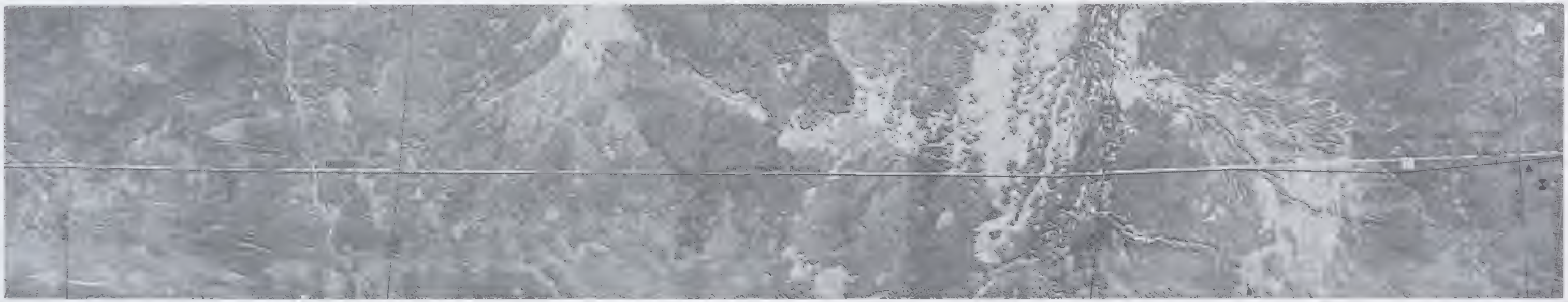
SCALE 1" = 2000'
SHEET 16 OF 80
2A-0200-1016

OWNERSHIP

DRILL HOLE DATA

PROFILE

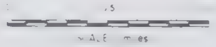




4 0210 0+9

MATCH LINE 1020 70

FOOTAGE THIS SHEET



PIPELINE LEGEND

- [illegible] PIPE
- [illegible] PIPE
- BERM BREAK
- SWAMP WEIGHT
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- [illegible]
- BLOCK VALVE
- TEST LEAD & DIRECTION OF WIRES
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- MILEPOST SIGN AIRCRAFT
- CHAINAGE EQUATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- [illegible]
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- [illegible]
- COMMUNICATIONS TOWER
- SIDE VALVE
- WINTER TRAIL

PIPE DATA	
CARRIER - 48" OD x 0.720" WT GRADE 70	
HEAVYWALL - 48" OD x 1.034" WT GRADE 65	

COATING DATA

QUAN	DESCRIPTION	

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES

1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

B-0 No buoyancy
B-1 Potential buoyant conditions along segment
B-2 Potential buoyant conditions along portions of the segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CR73171	31-40

OPERATING LICENCE Nº	
CONSTRUCTION PERMIT Nº	
MIN TEST PRESSURE	2100 psi
MAX OPERATING PRESSURE	1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. 008

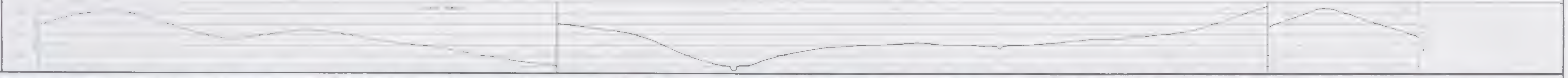
DOWNSTREAM M.P. 1020

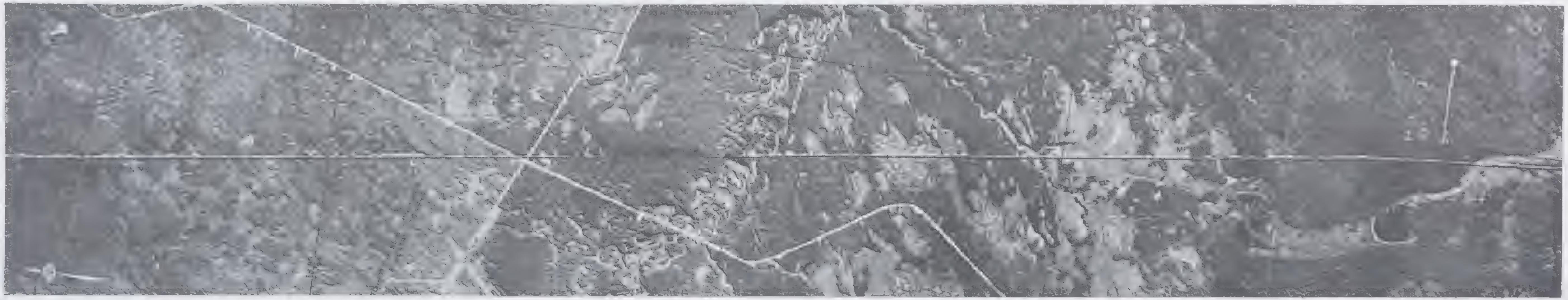
CHKD BY		SCALE 1 = 3000	2A-0200-1017
APPD BY		REF 17 · 50	

OWNERSHIP

DRILL HOLE DATA

PROFILE





FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

COMPRESSOR STATION

STORAGE OR STAGING AREA

CAMP SITE

PERMANENT R/W

TEMPORARY R/W

HELIPAD

MEASURING STATION

COMMUNICATIONS TOWER

PIPE DATA	
CARRIER 48 OD x 0.720 WT GRADE 70	
HEAVYWALL 48 OD x 1.034" WT GRADE 65	

DESCRIPTION	

GENERAL NOTES

1. PERMANENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

OPERATING LICENCE No

CONSTRUCTION PERMIT No

MIN TEST PRESSURE

MAX OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.

DOWNSTREAM M.P.

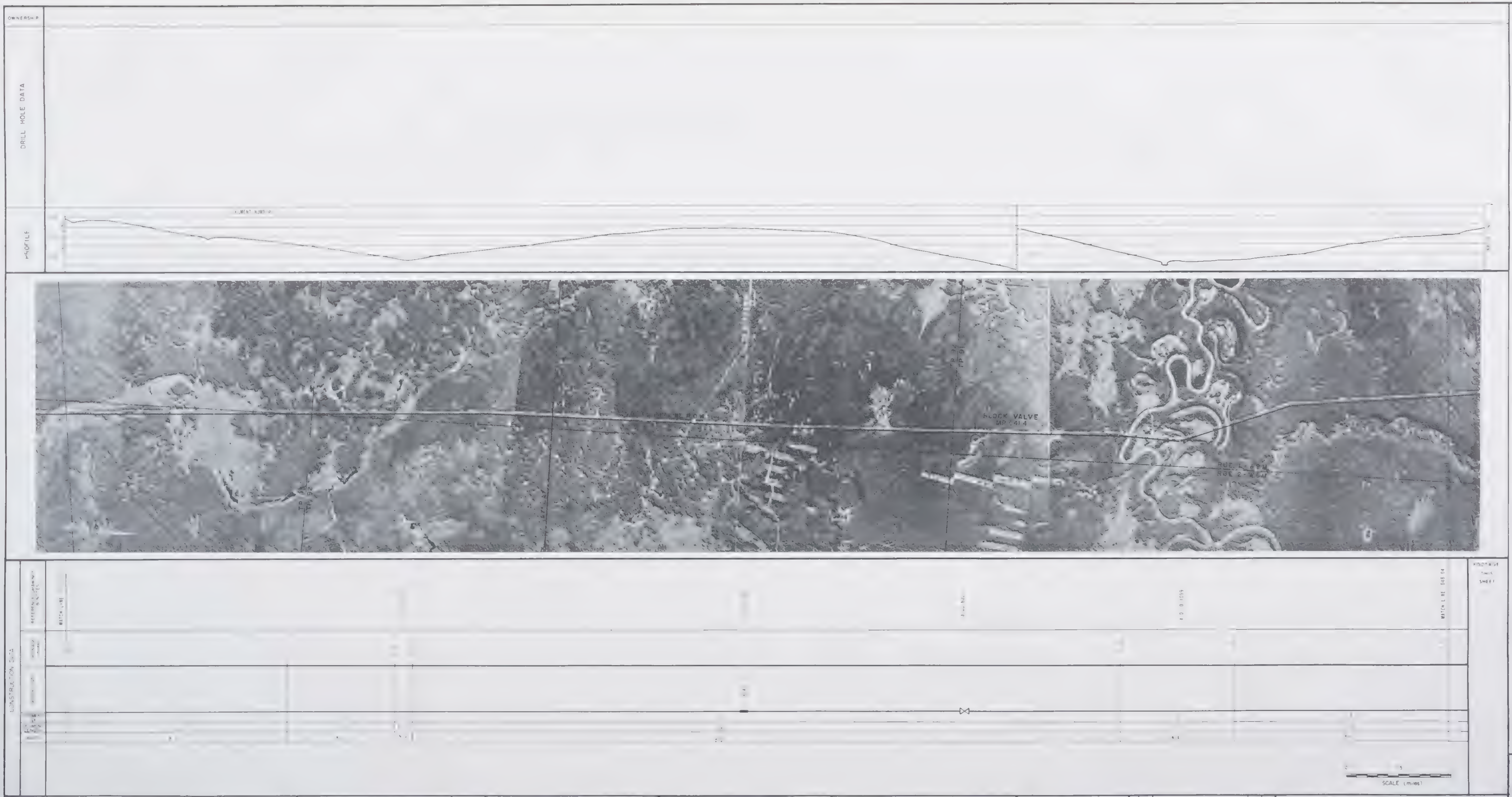
Jan 8/7

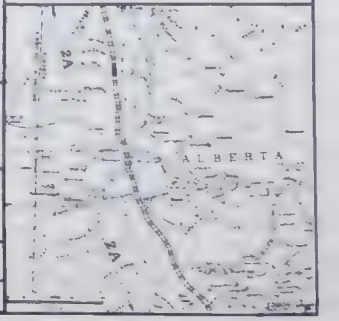
Jan 22/74

SCALE 1 : 2000

SHEET 18 OF 50

2A-0200-1018





PIPELINE LEGEND

PERMANENT ROAD
TEMPORARY ROAD
HELIPAD
WARNING SIGN
COMPRESSOR STATION
CAMP SITE

PIPE DATA	QUAN
CARRIER - 48" OD x 0.720" W.T. GRADE 70	
HEAVYWALL - 48" OD x 1.034" W.T. GRADE 65	

QUAN	DESCRIPTION	BEQN Nº

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 2.5 FEET

AERIAL PHOTOGRAPHY

	PHOTO Nº
	5 60

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº
MIN. TEST PRESSURE
MAX. OPERATING PRESSURE 680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.
DOWNSTREAM M.P. 646

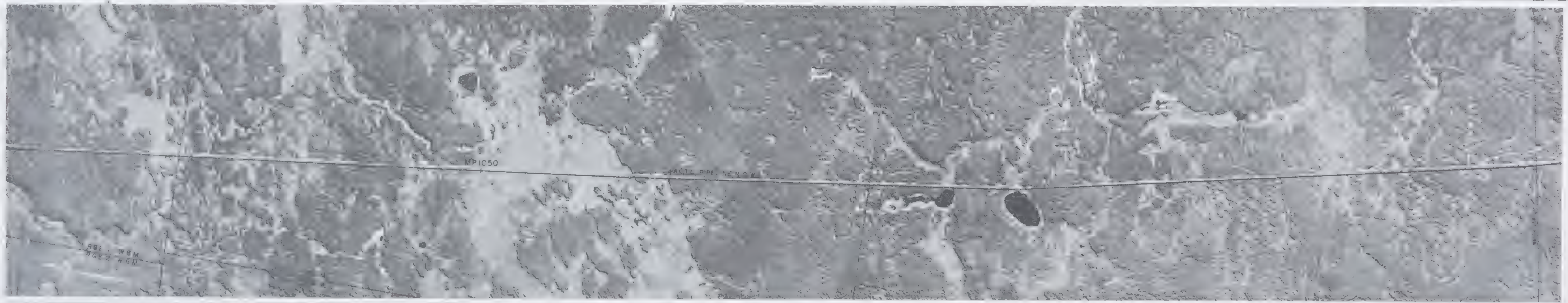
SCALE 1" = 2000'
SHEET 19 OF 50

2A-0200-1C19

OWNERSHIP

DRILL HOLE DATA

PROFILE



CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE miles

PIPELINE LEGEND

- ARMOR PIPE
- BERM AREA
- SWAMP WEIGHT
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- TEST LEAD & DIRECTION OF WIRES
- DRILL HOLE LOCATION
- MARKING SIGN
- MILEPOST SIGN AIRCRAFT
- CHAINAGE LOCATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- QUARRY
- TEMPORARY ROAD
- HELIPAD

CARRIER 48" OD x 0.720" WT GRADE 70	
HEAVYWALL 48" OD x 1.034" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 3.0 FEET

BUOYANCY LEGEND

B-0 No Buoyancy
B-1 Potential buoyant conditions along segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CR73171	61-71

OPERATING LICENCE Nº	
CONSTRUCTION PERMIT Nº	
MIN TEST PRESSURE	2100 p.s.i.
MAX OPERATING PRESSURE	680 p.s.i.

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.
DOWNSTREAM M.P.

CHKD BY Jan 18/74
APPD BY Jan 22/74

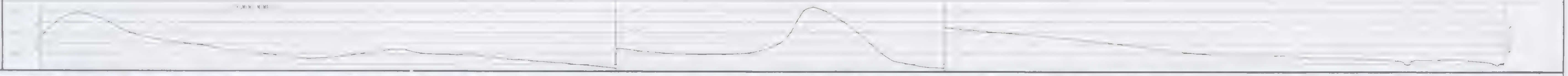
SCALE 1" = 2000'
SHEET 20 OF 50

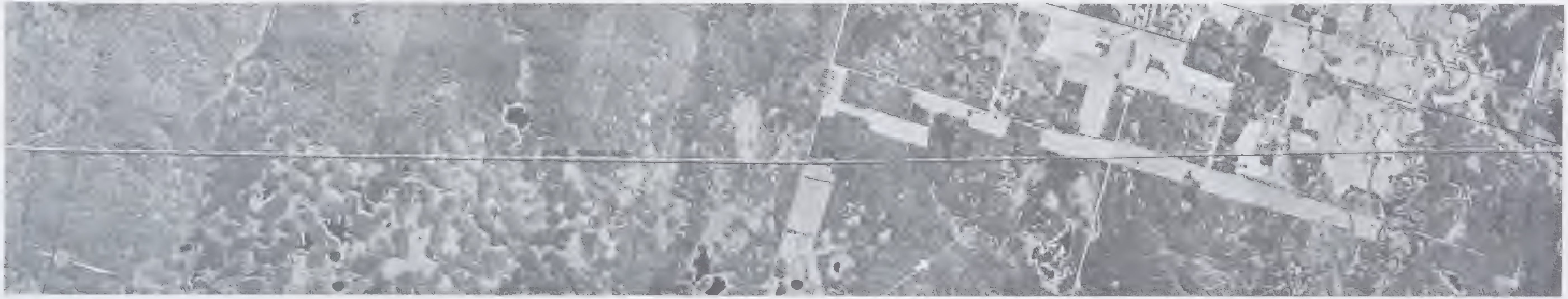
2A-0200-1020

OWNERSHIP

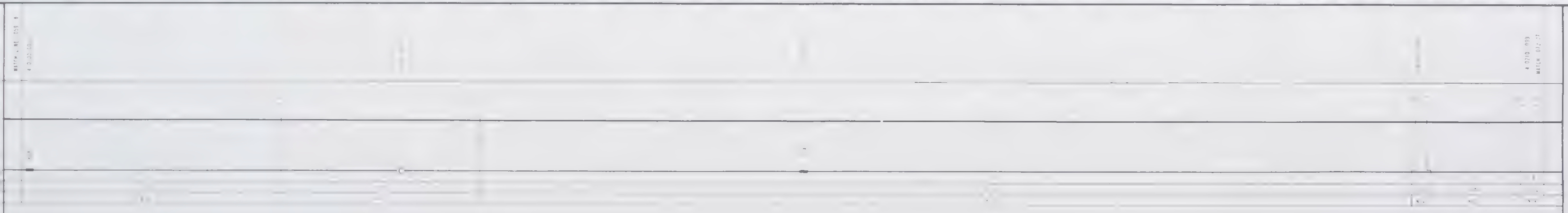
DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA



FOOTAGE THIS SHEET

SCALE miles

PIPELINE LEGEND

- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- TEST LEAD & DIRECTION OF WIRES
- POINT OF INTERSECTION
- [K] COMPRESSOR STATION
- AIR STRIP
- △ STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- SIDE VALVE
- WINTER TRAIL

PIPE DATA	QUAN
HEAVYWALL 48" OD x 1.034" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES

2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

- B-0 No buoyancy
- B-1 Potential buoyant conditions along segment
- B-2 Potential buoyant conditions along portions of the segment

AERIAL PHOTOGRAPHY

ROLL Nº | PHOTO Nº

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE	2100 psi
MAX OPERATING PRESSURE	1680 psi

Nº | DATE | REVISION | APPD BY | APPD BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

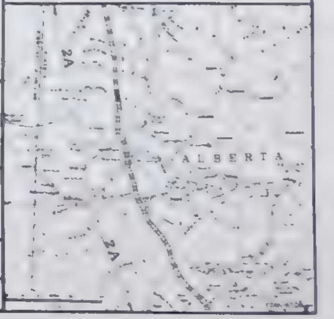
ALBERTA

UPSTREAM M.P. 1059 DOWNSTREAM M.P. 1072

SCALE 1:4000

SHEET 21 OF 50

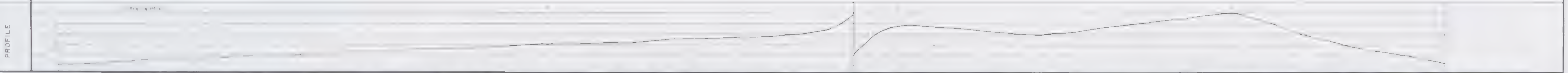
2A-0200-1021

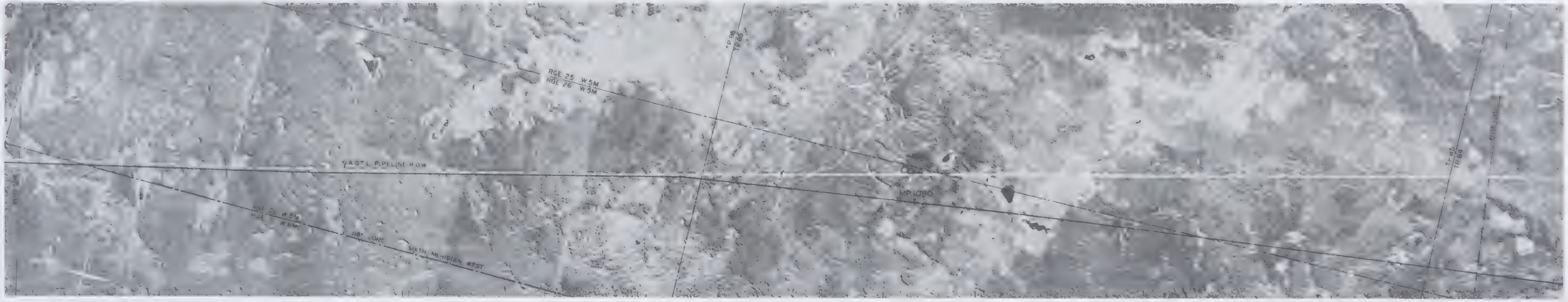


OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

PERMANENT ROAD
TEMPORARY ROAD
HELIPAD
POINT OF INTERSECTION
DRILL HOLE LOCATION
WARNING SIGN
MILEPOST SIGN AIRCRAFT
CHAINAGE LOCATION
COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
STAGING AREA & CAMP SITE
BORROW SITE
WHARF
BERM BREAK
SWAMP WEIGHT
RIVER WEIGHT
FROST ANCHOR
SCREW ANCHOR
HEAVY WALL PIPE

PIPE DATA	QUAN
CARRIER - 48" O.D. x 0.720" W.T. GRADE 70	
HEAVYWALL - 48" O.D. x 1.034" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
B-0 No buoyancy
B-1 Potential buoyant conditions along segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CA73171	82-88
CA73160	178-186

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE	2100 p.s.i.
MAX. OPERATING PRESSURE	1680 p.s.i.

Nº	DATE	REVISION	APPD BY	APPD BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

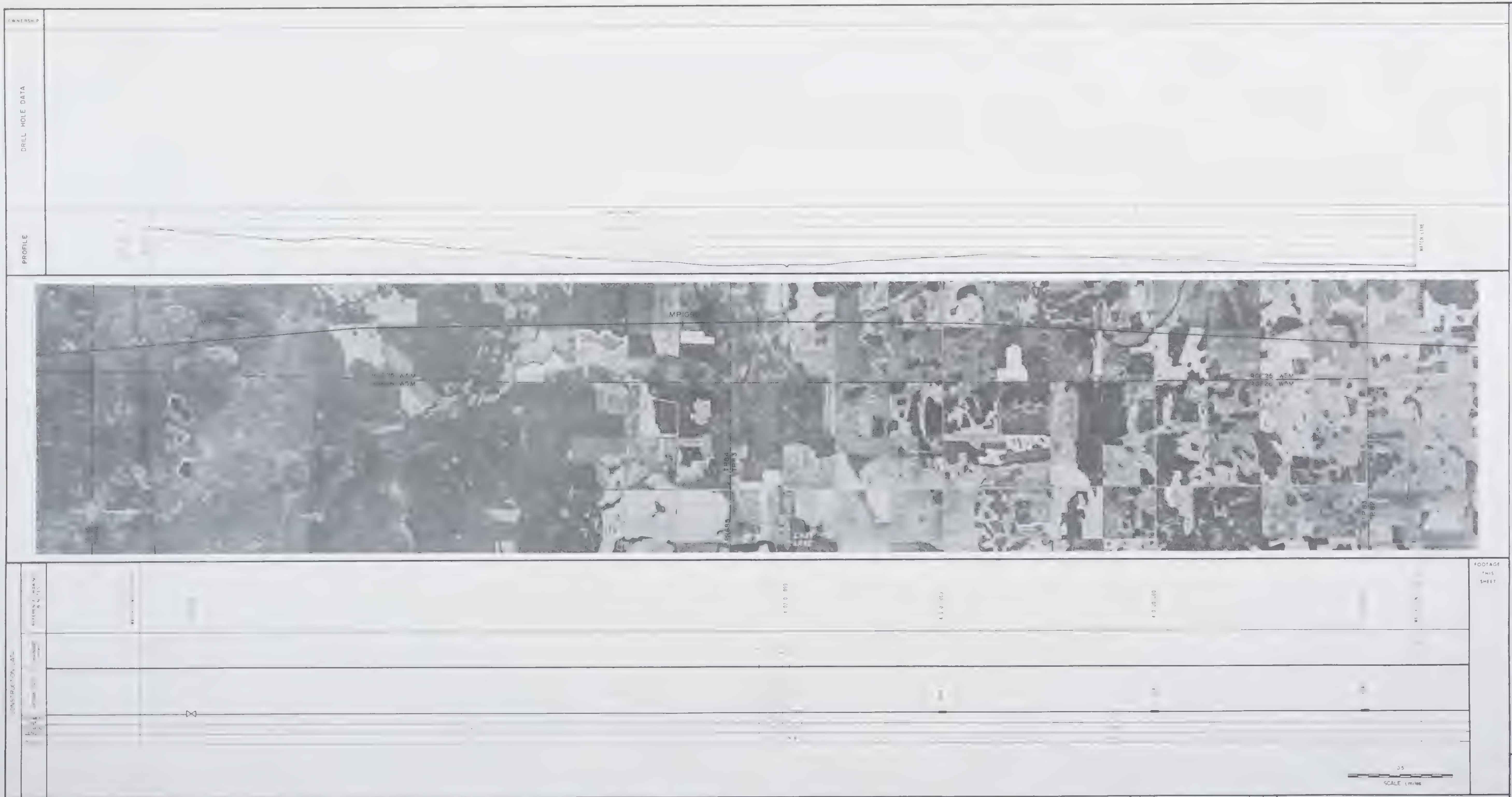
ALBERTA

UPSTREAM M.P.
DOWNSTREAM M.P.

CHKD BY
APPD BY

SCALE 1:2000
SHEET 22 OF 50

2A-0200-1022



PIPELINE LEGEND

- CARRIER PIPE
- CARRIER PIPE
- BERM BREAK
- [illegible]
- RIVER WEIGHT
- [illegible]
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- [illegible]
- BLOCK VALVE
- TEST LEAK & DIRECTION OF [illegible]
- ○ POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- [illegible]
- ★ CHAINAGE LOCATION
- [illegible]
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- ■ WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD

PIPE DATA	QUAN
CARRIER - 48" OD x 0.720" W.T. GRADE 70	
HEAVYWALL - 48" OD x 1.034" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	BEDN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS WATCH LINE MILEPOST PLUS CHAINAGE VALUE.
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
B0 No Buoyancy
B1 Potential buoyant conditions along segment
B2 Potential buoyant conditions along portions of segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nº
CR73160	166 177

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº
MIN TEST PRESSURE 2100 psi
MAX OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

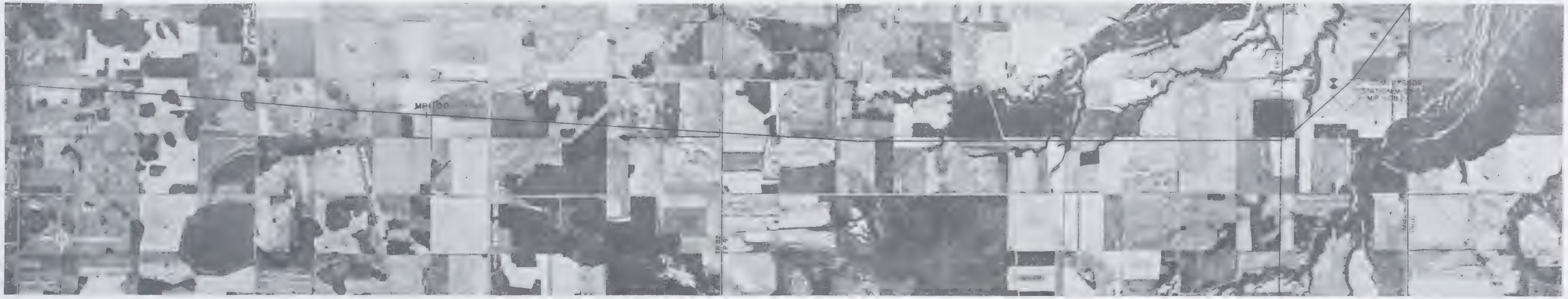
UPSTREAM M.P. [illegible]
DOWNSTREAM M.P. [illegible]

CHKD BY Jan 18/74
APPRD BY Jan 22/74
SCALE 1:2000
SHT 23 - 50
2A-0200-1023

OWNERSHIP

DRILL HOLE DATA

PROFILE



CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE miles

PIPELINE LEGEND

- CARRIER PIPE
- CARRIER PIPE
- BERM BREAK
- SWAMP WEIGHT
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK (concrete)
- BLOCK VALVE
- [illegible] & DIRECTION OF WIRES
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- MILEPOST SIGN AIRCRAFT
- CHAINAGE EQUATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- MEASURING STATION
- COMMUNICATIONS TOWER
- SITE [illegible]
- WINTER TRAIL

PIPE DATA	
CARRIER 48" OD x 0.720" W T GRADE 70	
HEAVYWALL - 48" OD x 1.034" W T GRADE 65	

COATING DATA

MATERIAL

REFERENCE DRAWINGS

GENERAL NOTES

1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

- B-0 No buoyancy
- B-1 Potential buoyant conditions along segment
- B-2 Potential buoyant conditions along portions of the segment

AERIAL PHOTOGRAPHY	
ROLL Nº	PHOTO Nº
CR 73160	155 165

OPERATING LICENCE Nº	
CONSTRUCTION PERMIT Nº	
MIN TEST PRESSURE	2100 p.s.i.
MAX OPERATING PRESSURE	1680 p.s.i.

REVISION

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. 1097

DOWNSTREAM M.P. 1108

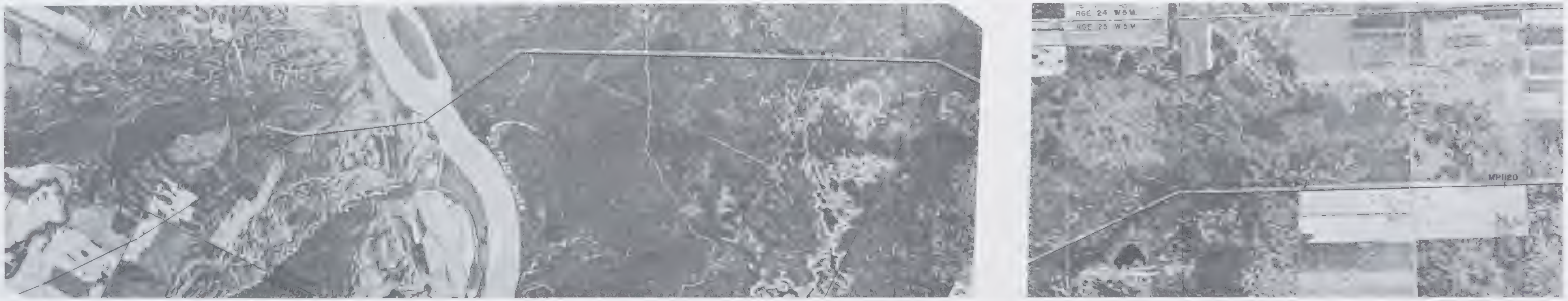
SHEET 24 OF 50

2A-0200-1024

OWNERSHIP

DRILL HOLE DATA

PROFILE



CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

- ARMOR PIPE
- ARMOR PIPE
- BERM BREAK
- SWAMP WEIGHT
- RIVER WEIGHT
- FROST ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- TEST LEAD & DIRECTION OF WIRES
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- MILEPOST SIGN AIRCRAFT
- DRAINAGE STATION
- COMPRESSOR STATION
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD

PIPE DATA	QUAN
HEAVYWALL - 48" OD x 1.034" W.T. GRADE 65	

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	REVISION

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 2.5 FEET

B-0 No Buoyancy
B-1 Potential buoyant condit. one along segment
B-2 Potent. al buoyant cond. t are along portions of the segment

AERIAL PHOTOGRAPHY	
ROLL Nº	PHOTO Nºs
CR73160	208 - 212
CR73166	135 - 138

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE	2100 psi
MAX OPERATING PRESSURE	1680 psi

Nº	DATE	REVISION	APPROVED BY	APPROVED BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

UPSTREAM M.P. 08
DOWNSTREAM M.P. 20

CHKD BY
APPROVED BY

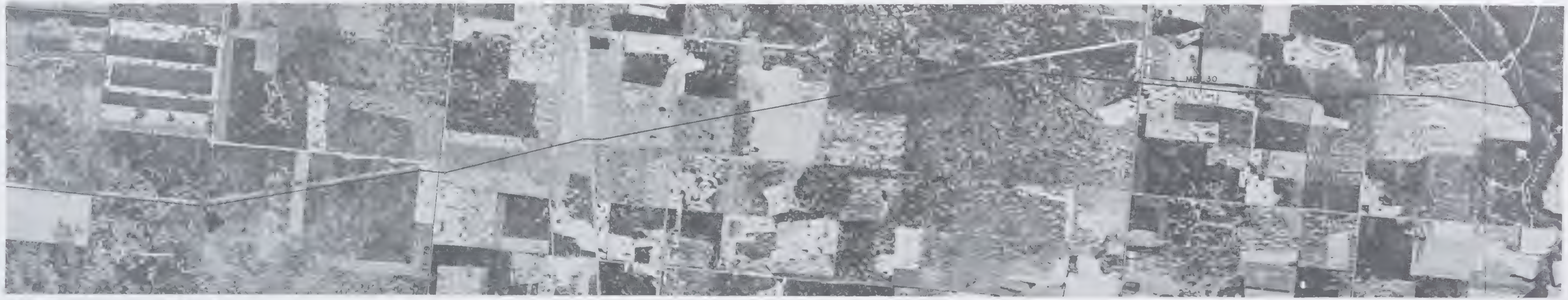
SCALE 1 : 2000
SHEET 25 OF 50

2A-0200-1025

OWNERSHIP

DRILL HOLE DATA

PROFILE



FOOTAGE THIS SHEET

SCALE miles

PIPELINE LEGEND

STORAGE OR STAGING AREA

CAMP SITE

STAGING AREA & CAMP SITE

HELIPAD

COMPRESSOR STATION

CARRIER - 48" OD x 0.720" WT GRADE

HEAVYWALL 48" ... 0.54" WT

COATING DATA

CONSTRUCTION PERMIT No

MIN TEST PRESSURE

MAX OPERATING PRESSURE

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.

DOWNSTREAM M.P.

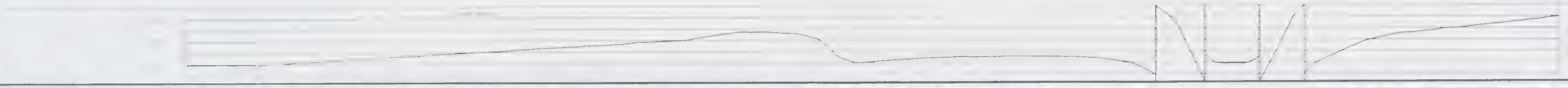
26 50

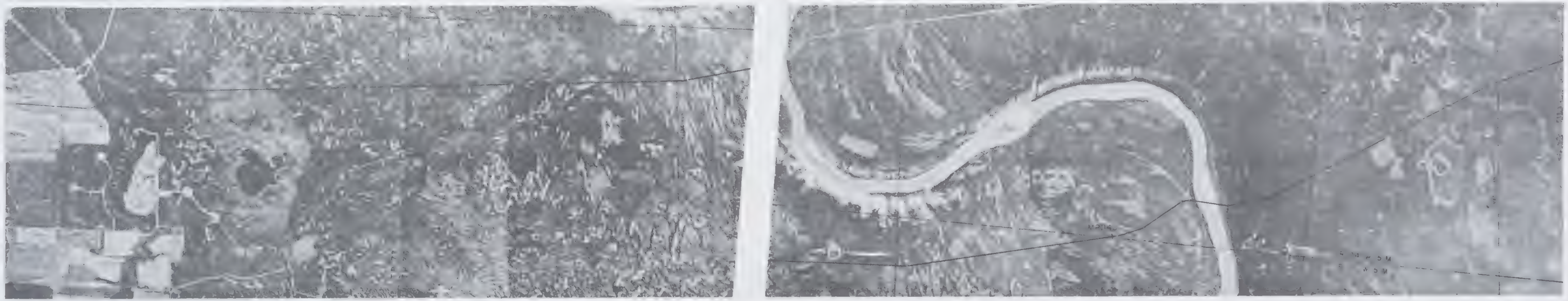
2A-0200-1026

OWNERSHIP

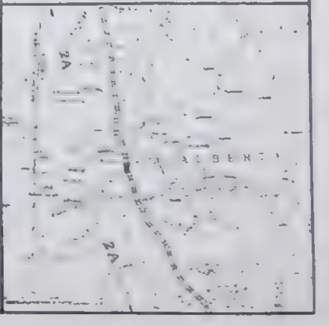
DRILL HOLE DATA

PROFILE





FOOTAGE THIS SHEET



PIPELINE LEGEND

AIR STRIP

STORAGE OR STAGING AREA

CAMP SITE

STAGING AREA & CAMP SITE

PIPE DATA	QUAN
CARRIER - 48" OD x 0.720" W.T. GRADE 70	
.034"	

COATING DATA

QUAN	DESCRIPTION

REFERENCE DRAWINGS

GENERAL NOTES:

MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

OPERATING ...

DESIGN PRESSURE

MIN. TEST PRESSURE

MAX. OPERATING PRESSURE 680 psi

Nº	DATE	REVISION	APPR. BY	APPR. BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.

DOWNSTREAM M.P.

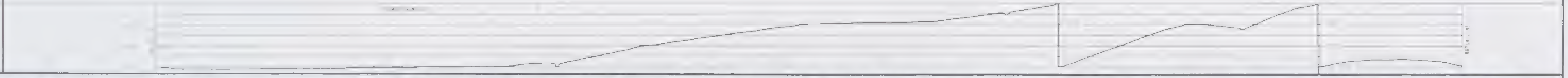
27 · 50

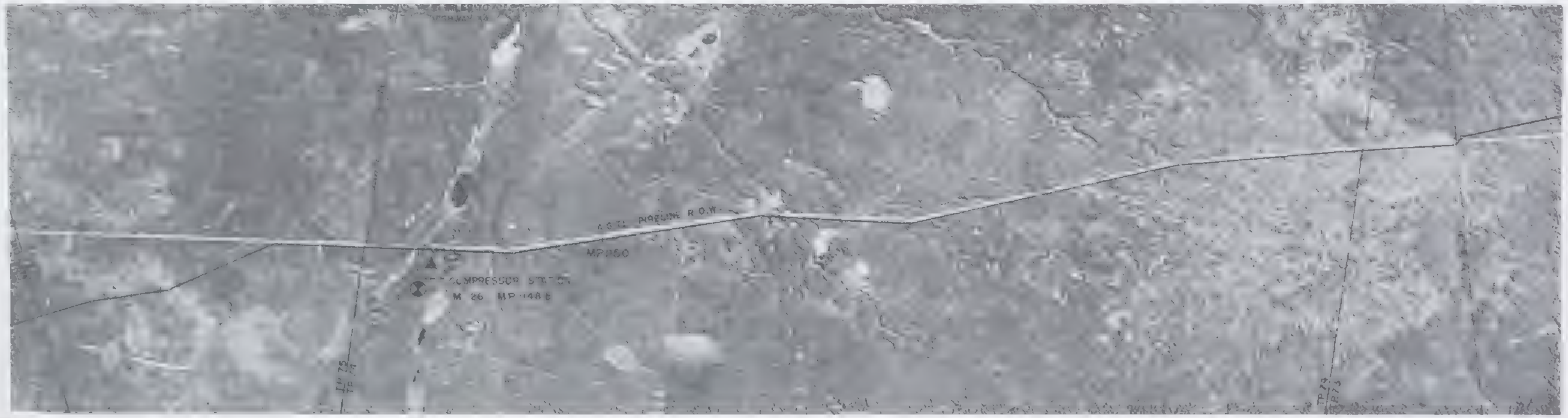
2A-0200-1027

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

MATCH LINE

MATCH LINE

FOOTAGE THIS SHEET

SCALE miles

PIPELINE LEGEND

- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- QUARRY
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD

PIPE DATA	
CARRIER - 48" OD x 0.720" W.T. GRADE 70	
HEAVYWALL - 48" OD x 1.034" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

REFERENCE DRAWINGS

GENERAL NOTES

SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.

MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nº
CR7168	170-171
CR 3168	170A-170E
CR7160	[illegible]

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE 2100 psi

MAX. OPERATING PRESSURE 680 psi

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. DOWNSTREAM M.P.

SCALE 1:1000

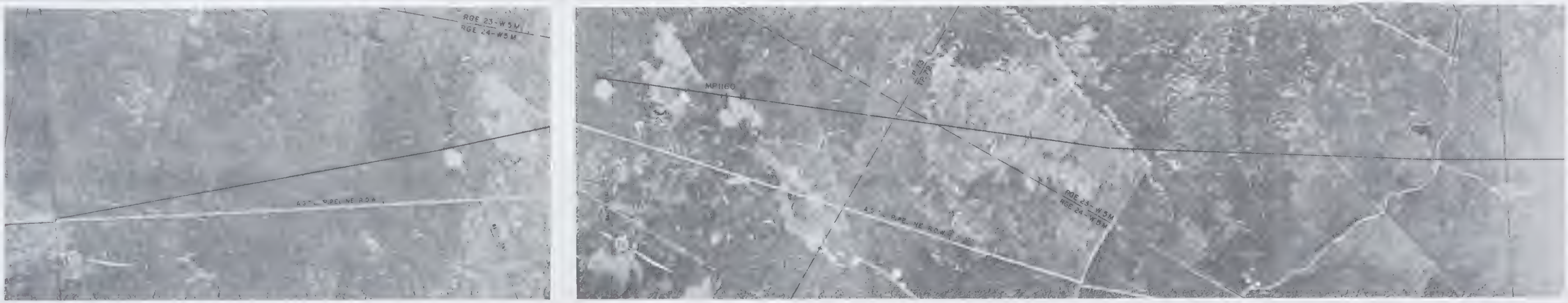
SHEET 28 OF 80

2A-0200-1028

OWNERSHIP

DRILL HOLE DATA

PROFILE



CONSTRUCTION DATA

MATCH LINE

MATCH LINE

4 02 0 090

4 0210 359

4 0100 000

MATCH LINE 1160 83

FOOTAGE THIS SHEET

5

MILES

PIPELINE LEGEND

POINT OF INTERSECTION
DRILL HOLE LOCATION
MILEPOST SIGN AIRCRAFT
CHAINAGE EQUATION
COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
PERMANENT ROAD
TEMPORARY ROAD
HELIPAD

PIPE DATA	QUAN
CARRIER - 48" OD x 0.720" WT GRADE 70	
HEAVYWALL - 48" OD x 1.034" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY	
ROLL Nº	PHOTO Nº
CR73108	194 200 207 212

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE

MAX OPERATING PRESSURE 1680 psi

Nº	DATE	REVISION	APPD BY	APPD BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. 1155
DOWNSTREAM M.P. 1161

APPD BY

SCALE 1" = 2000'

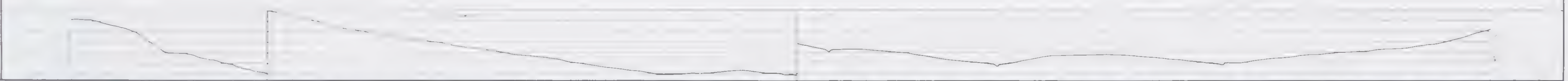
SHEET 29 OF 50

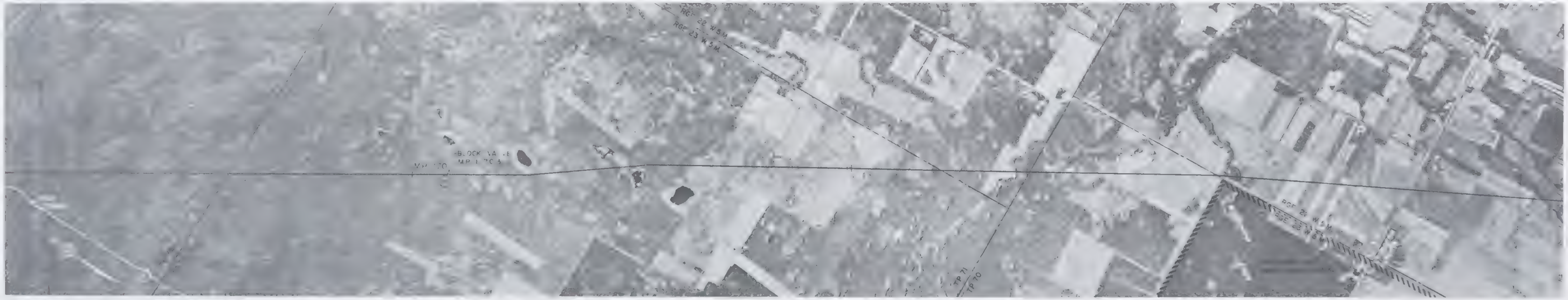
2A-0200-1029

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

4 0 00 0.01
MATCH LINE 1179 50

FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

- WARNING SIGN
- MILEPOST SIGN AIRCRAFT
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- HELIPAD
- SWAMP WEIGHT
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE

PIPE DATA	QUAN
CARRIER - 48" OD x 0.720" W.T. GRADE 70	
HEAVYWALL - 48" OD x 1.034" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nº

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº
MIN. TEST PRESSURE 2000 p.s.i.
MAX. OPERATING PRESSURE 1680 p.s.i.

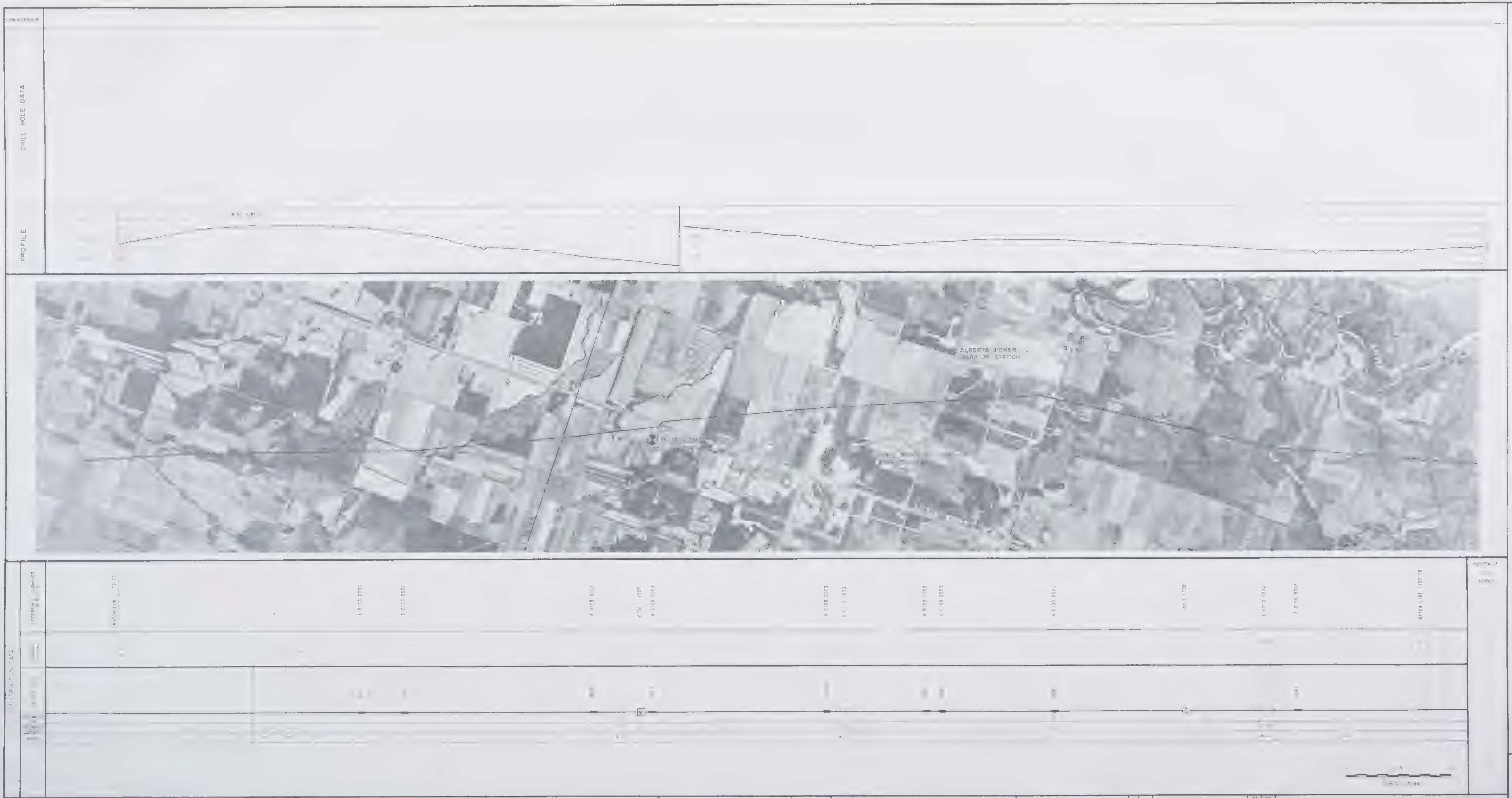
Nº	DATE	REVISION	APP'D BY	APP'D BY

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

UPSTREAM M.P. 67
DOWNSTREAM M.P.

DRAWN BY Jan 18/74
APPR. BY Jan 22/74
SCALE 1:2000
SHEET 30 - 50
2A-0200-1030



PIPELINE LEGEND

COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
BORROW PIT
PERMANENT ROAD
TEMPORARY ROAD
HELIPAD
MEASURING STATION
SIDE VALVE
WINTER TRAIL

PIPE DATA	QUAN
CARRIER 48 OD x 0.770 WT GRADE 70	
HEAVYWALL 48 OD x 1.034" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	REQN NO

REFERENCE DRAWINGS	DWG NO

1 SEGMENT MILEPOST EQUALS WATCHLINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

ROLL NO	PHOTO NOS
CR73-66	226 234

CONSTRUCTION PERMIT NO

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. DOWNSTREAM M.P.

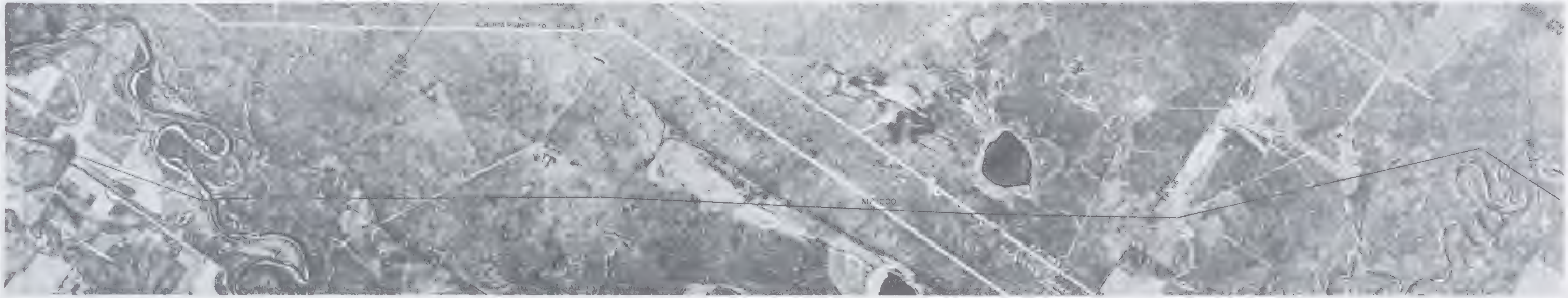
SHEET 31 OF 50

2A-0200-1031

OWNERSHIP

DRILL HOLE DATA

PROFILE



CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE

PIPELINE LEGEND

DRILL HOLE LOCATION
STORAGE OR STAGING AREA
TEMPORARY ROAD
HELI PAD

CARRIER - 48" O.D. x 0.720" W.T. GRADE 70

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQN Nº

1. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

ROLL Nº	PHOTO Nº
CR73171	91 98

CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE

MAX. OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. 91 DOWNSTREAM M.P.

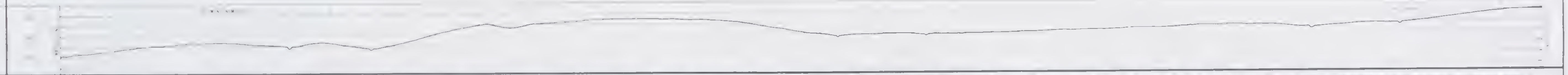
32 · 50

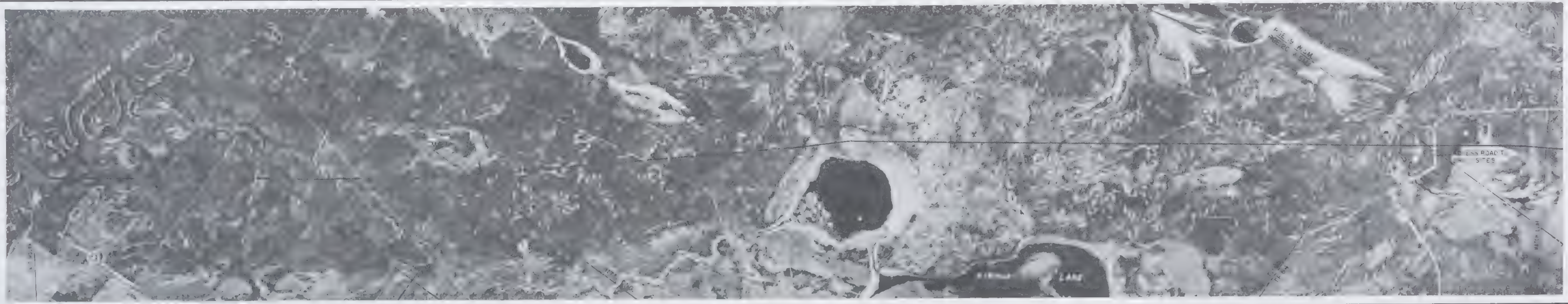
2A-0200-1032

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

MATCH LINE 12 9 70

THIS SHEET

SCALE (miles)

PIPELINE LEGEND

			POINT OF INTERSECTION		PERMANENT ROAD
					TEMPORARY ROAD
▼			WARNING SIGN		HELI PAD
		★			
			COMPRESSOR STATION		
			AIR STRIP		
	HEAVY WALL PIPE	△	STORAGE OR STAGING AREA		
		▲	CAMP SITE		
		◎	STAGING AREA & CAMP SITE		
			BORROW SITE		
	TEST LEAD & DIRECTION # WIRES	●	WHARF		

CARRIER - 48" OD x 0.720" W.T. GRADE 70
HEAVYWALL - 48" OD x 1.034" W.T. GRADE 65

GENERAL NOTES
SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER - 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

OPERATING LICENSE NO.
CONSTRUCTION PERMIT NO.

MIN. TEST PRESSURE 2100 psi
MAX. OPERATING PRESSURE 680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

UPSTREAM M.P. 1206
DOWNSTREAM M.P.

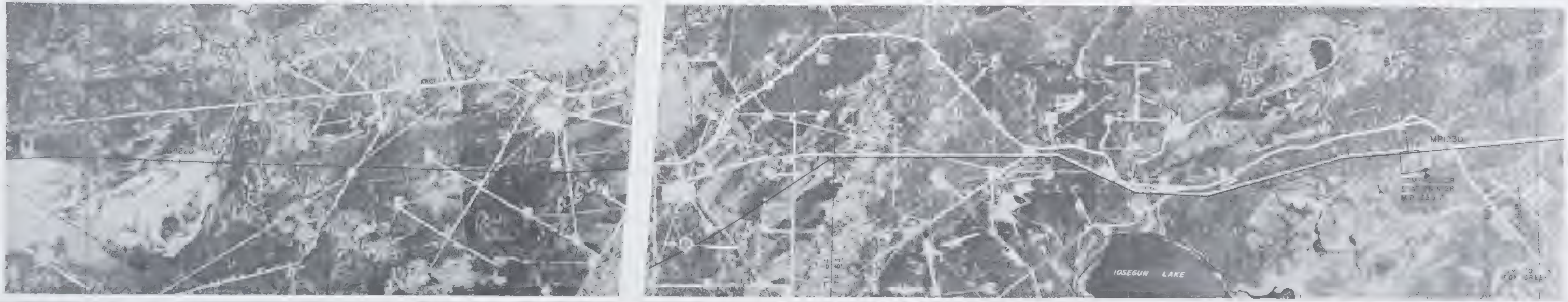
DRN BY
DATE
CHKD BY Jan 18/74
APPRD BY Jan 22/74
SCALE 1" = 2000'
SHEET 33 OF 50

2A-0200-1033

OWNERSHIP

DRILL HOLE DATA

PROFILE



FOOTAGE THIS SHEET

0.5 1.0
SCALE (miles)

PIPELINE LEGEND

		○	POINT OF INTERSECTION		PERMANENT ROAD
					TEMPORARY ROAD
▼			WARNING SIGN		HELIPAD
■					MEASURING STATION
●		★			COMMUNICATIONS TOWER
	FROST ANCHOR		COMPRESSOR STATION		SIDE VALVE
	SCREW ANCHOR		AIR STRIP		WINTER TRAIL
		△	STORAGE OR STAGING AREA		
		▲	CAMP SITE		
		■	WHARF		

48" OD x 0.720" WT GRADE 70	
HEAVYWALL - 48" OD x 1.084" WT GRADE 65	

QUAN	DESCRIPTION	REQN Nº

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CR73181	15 19

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE
MAX OPERATING PRESSURE 1680 psi

Nº	DATE	REVISION	APPD BY	APPD BY

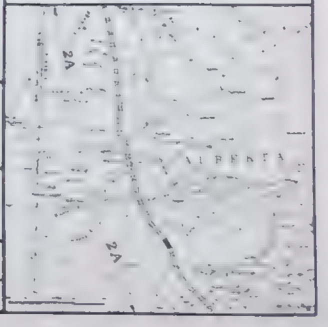
NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

UPSTREAM M.P.
DOWNSTREAM M.P.

Jan 16/74

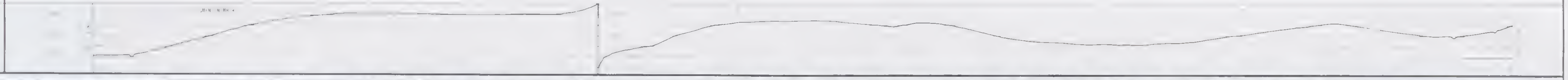
SCALE 1 : 2000
SHEET 34 OF 50
2A-0200-1034

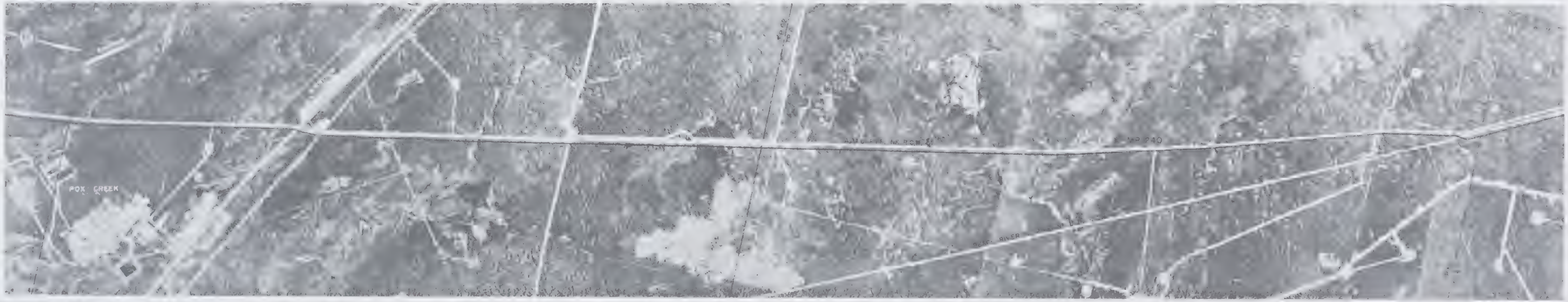


OWNERSHIP

DRILL HOLE DATA

PROFILE





MATCH LINE

MATCH LINE 243.27

FOOTAGE THIS SHEET

SCALE miles

PIPELINE LEGEND

POINT OF INTERSECTION
COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
BORROW SITE
WHARF
PERMANENT ROAD

PIPE DATA	QUAN
CARRIER - 48" O.D. x 0.720" W.T. GRADE 70	
HEAVYWALL - 48" OD x 1.034" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQ'N Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES:
1 SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
B-0 No buoyancy
1-2 Potential buoyant (and ... part of

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nº
CA73181	28 38

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº
MIN TEST PRESSURE
MAX OPERATING PRESSURE 1680 psi

Nº	DATE	REVISION	APPR'D BY	APPR'D BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

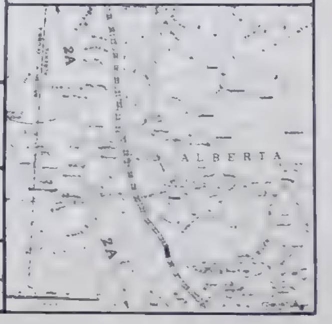
GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

UPSTREAM M.P. 1231
DOWNSTREAM M.P. 241

APPR'D BY

35 · 50

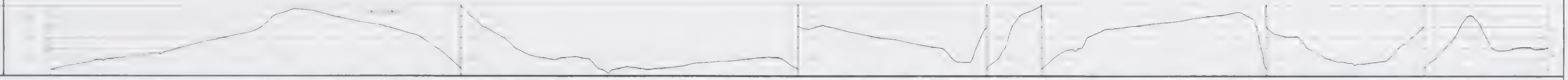
2A-0200-1035

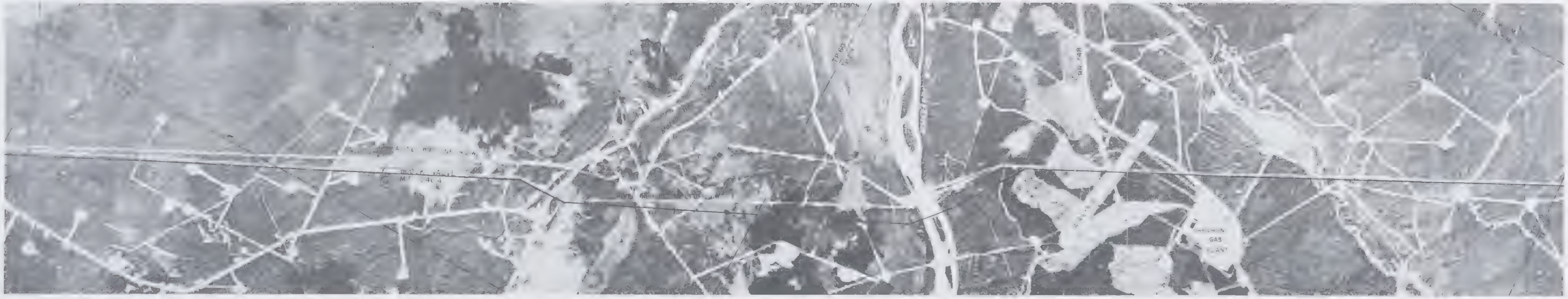


OWNERSHIP

DRILL HOLE DATA

PROFILE





REFERENCE DRAWINGS & NOTES

MATCH LINE

FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

- BERM BREAK
- SWAMP WEIGHT
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- TEST LEAD & DIRECTION OF WIRES
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- MILEPOST SIGN AIRCRAFT
- DRAINAGE LOCATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD

PIPE DATA	QUAN
CARRIER - 48" OD x 0.720" W.T. GRADE 70	
HEAVYWALL - 48" OD x 1.034" W.T. GRADE 65	

COATING DATA

QUAN	DESCRIPTION	REF DWG N°

REFERENCE DRAWINGS	DWG N°

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 3.0 FEET

BUOYANCY LEGEND
- B-0 No buoyancy
- B-1 Potential buoyant conditions along segment
- B-2 Potential buoyant conditions along portions of the segment

AERIAL PHOTOGRAPHY

ROLL N°	PHOTO N°
CR73165	

OPERATING LICENCE N°

CONSTRUCTION PERMIT N°

MIN TEST PRESSURE	2100 psi
MAX OPERATING PRESSURE	680 psi

REVISIONS

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. (24)

DOWNSTREAM M.P. [illegible]

CHKD BY

APPRD BY

SCALE 1000

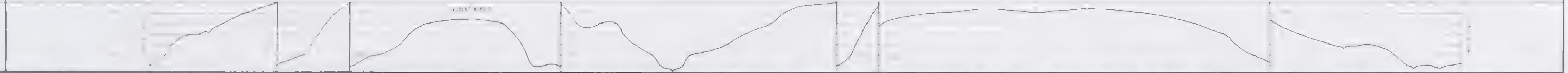
SHEET 36 OF 50

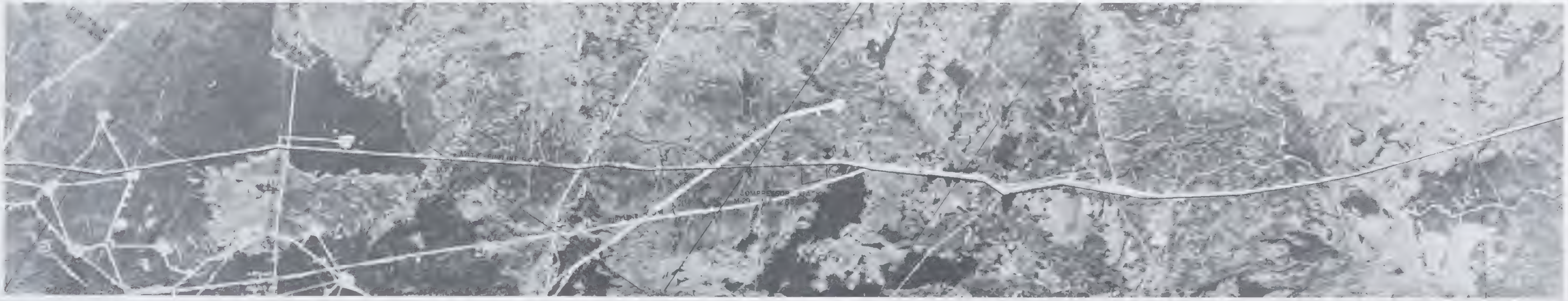
2A-0200-1036

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

SCREW ANCHOR
HEAVY WALL PIPE
CASING PIPE
COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
BORROW SITE
WHARF
PERMANENT ROAD
HELIPAD
COMMUNICATIONS TOWER
WINTER TRAIL

CARRIER - 48" OD x 0.720" WT GRADE	
HEAVYWALL - 48" OD x 1.034" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
No buoyancy

AERIAL PHOTOGRAPHY

ROLL Nº
PHOTO Nº

OPERATING LICENSE Nº
CONSTRUCTION PERMIT Nº
MIN TEST PRESSURE
MAX OPERATING PRESSURE 680 psi

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. 1252
DOWNSTREAM M.P.

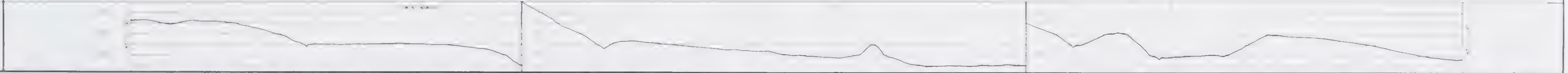
SHEET 37 - 50

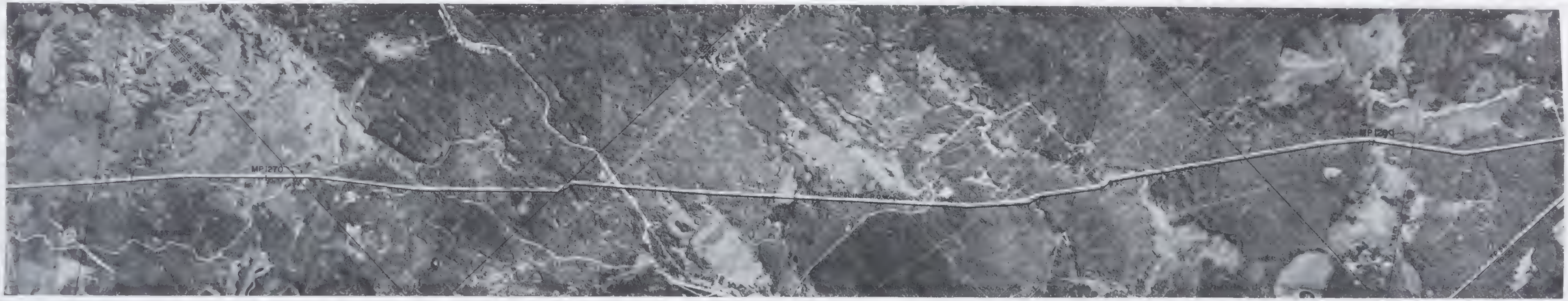
2A-0200-1037

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

REFERENCE DRAWINGS

DRAINAGE

DESIGN DATA

SEGMENT Nº

BUOY

MATCH LINE

FOOTAGE THIS SHEET

SCALE 1 miles

PIPELINE LEGEND

	[illegible]	○	POINT OF INTERSECTION		PERMANENT ROAD
	[illegible]		DRILL HOLE LOCATION		TEMPORARY ROAD
▼	BERM BREAK		WARNING SIGN		HELIPAD
	SWAMP WEIGHT		MILEPOST SIGN AIRCRAFT		
●	RIVER WEIGHT		CHAINAGE EQUATION		
	FROST ANCHOR		COMPRESSOR STATION		
	SCREW ANCHOR		AIR STRIP		
	HEAVY WALL PIPE	△	STORAGE OR STAGING AREA		
	[illegible]	▲	CAMP SITE		
	ANCHOR BLOCK [illegible]		STAGING AREA & CAMP SITE		
	[illegible]		BORROW SITE		
	[illegible]	●	WHARF		

PIPE DATA	QUAN
CARRIER - 48" OD x 0.720" WT GRADE 70	
HEAVYWALL - 48" OD x 1.034" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES

1. SEGMENT MILEPOST EQUALS WATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY	
ROLL Nº	PHOTO Nº
CR73180	70 79

OPERATING PERMIT Nº

CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE 2100 psi

MAX. OPERATING PRESSURE 1680 psi

Nº	DATE	REVISION	APPD BY	APPD BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. 1268
DOWNSTREAM M.P. 1280

DATE 23/74

SCALE 1:3000

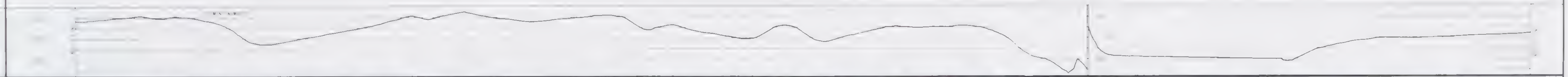
SHEET 38 OF 50

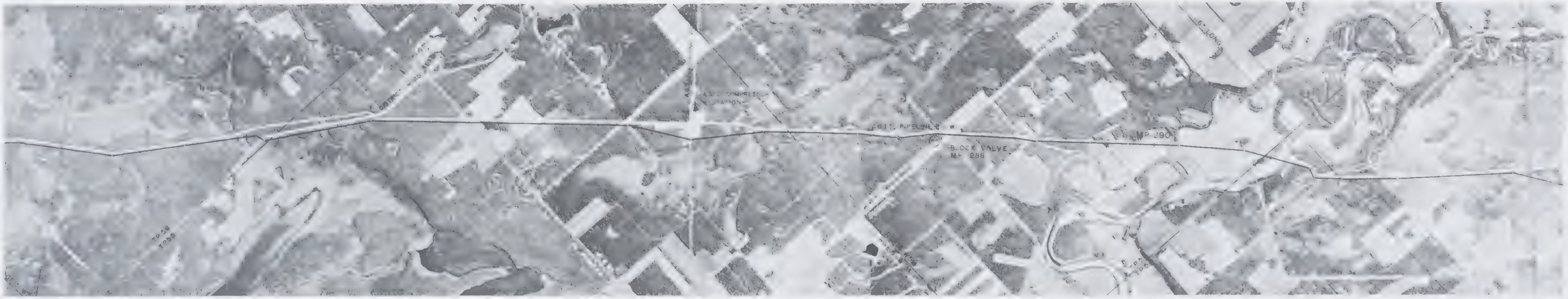
2A-0200-1038

OWNERSHIP

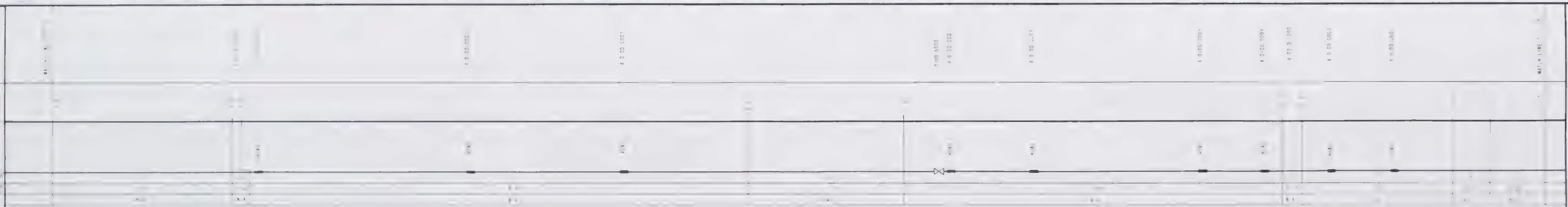
DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA



FOOTAGE THIS SHEET

·5
SCALE 1 miles

PIPELINE LEGEND

COMPRESSOR STATION
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
WHARF
HELIPAD

PIPE DATA	QUAN
HEAVIWALL 48 ·034" GRADE	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQN NO

REFERENCE DRAWINGS	DWG NO

GENERAL NOTES
SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

ROLL NO	PHOTO NO
CA73 60	58 69

OPERATING LICENCE NO
CONSTRUCTION PERMIT NO
MIN TEST PRESSURE 2100 psi
MAX OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.
DOWNSTREAM M.P.

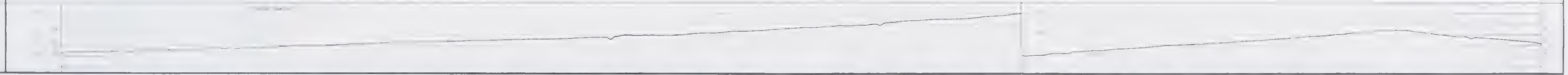
DR BY	DATE	
CHKD BY	Jan 18/74	SCALE 1:2000
APPRD BY	2/74	SHEET 39 of 50

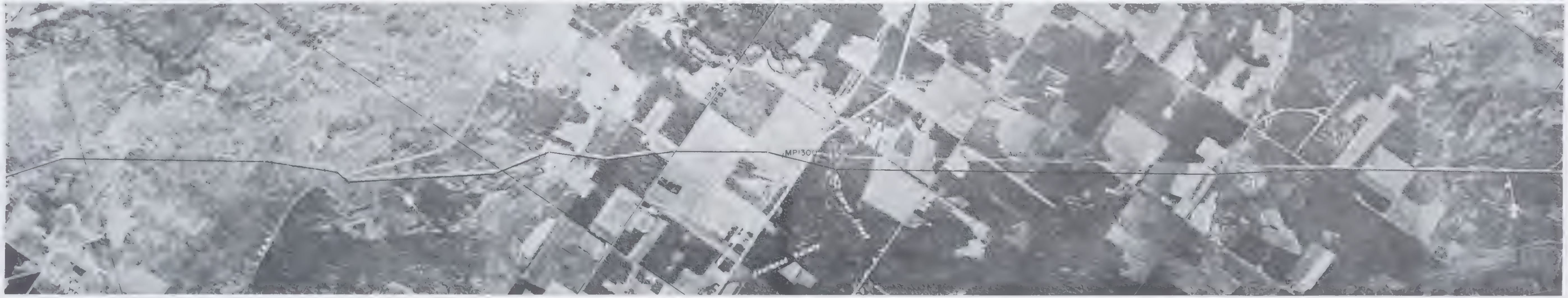
2A-0200-1039

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE – MILES

PIPELINE LEGEND

- CAMP SITE
- STORAGE OR STAGING AREA
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- COMPRESSOR STATION
- AIR STRIP

PIPE DATA		
CARRIER - 48" OD x 0.720" WT GRADE 70		
HEAVYWALL - 48" OD x 1.034" WT GRADE 65		

COATING DATA

MISCELLANEOUS MATERIAL

	DESCRIPTION	

REFERENCE DRAWINGS	DWG No

GENERAL NOTES

2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

No Buoyancy

AERIAL PHOTOGRAPHY

2R73160	47 57

MIN TEST PRESSURE	2100 psi
MAX OPERATING PRESSURE	1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.

DOWNSTREAM M.P.

DRN BY

DATE

CHKD BY

APPRD BY

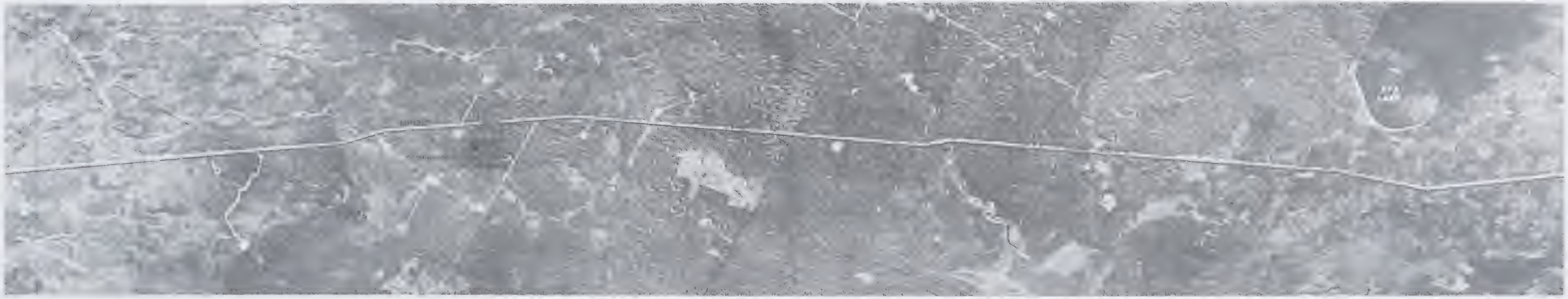
SCALE 1:2000

SHEET 40 of 50

2A-0200-1040

OWNERSHIP

DRILL HOLE DATA



CONSTRUCTION DATA

FOOTAGE THIS SHEET

MATCH LINE

SCALE (miles)

PIPELINE LEGEND

- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- TEST LEAD & DIRECTION OF WIRES
- PERMANENT ROAD
- TEMPORARY ROAD
- RAILWAY
- WINTER TRAIL

PIPE DATA	QUAN
CARRIER 48" OD x 0.720" WT GRADE 70	
HEAVYWALL - 48" OD x 1.034" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES:

1. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

AERIAL PHOTOGRAPHY	
ROLL Nº	PHOTO Nºs

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE

MAX. OPERATING PRESSURE 1680 psi

Nº	DATE	REVISION	APPROD BY	APPROD BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

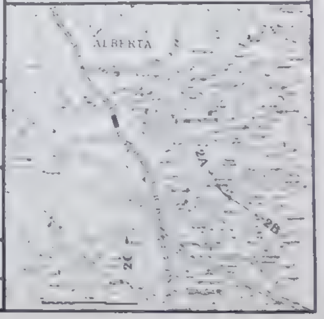
GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

UPSTREAM M.P.
DOWNSTREAM M.P.

22/7/74

41 - 50

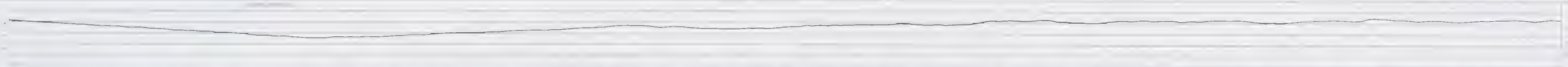
2A-0200-104

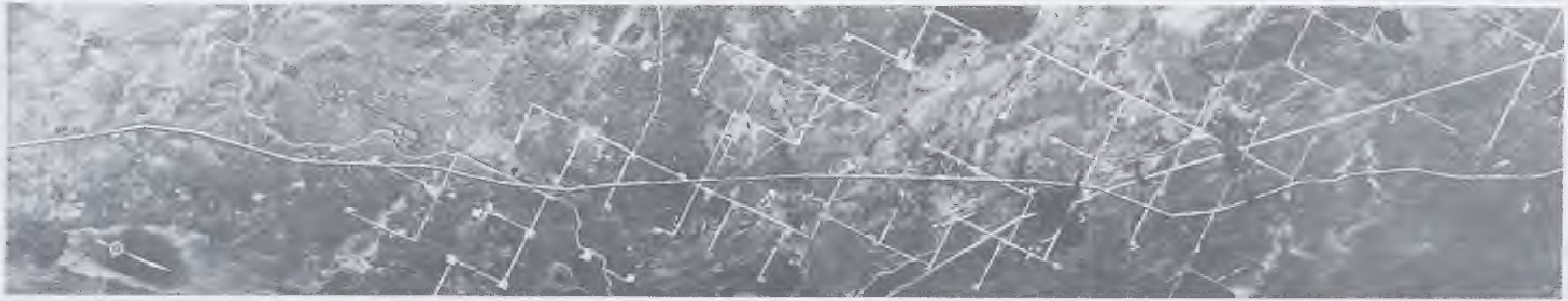


OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

REFERENCE DRAWINGS & NOTES

TOTAL IN THIS SHEET

SCALE — miles

PIPELINE LEGEND

- CARRIER PIPE
- BERM BREAK
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- TEST LEAD
- DRILL HOLE LOCATION
- MARKER SIGN
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- TEMPORARY ROAD
- HELIPAD

PIPE DATA	QUAN
CARRIER 48 OD x 0.720 WT GRADE 70	
HEAVYWALL - 48 OD x 1.034" WT GRADE 65	

COATING DATA

QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES

1. SEGMENT MILEPOST EQUALS WATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

0.0 No buoyancy

AERIAL PHOTOGRAPHS

ROLL Nº	PHOTO Nºs
[illegible]	[illegible]

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE

MAX OPERATING PRESSURE 680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

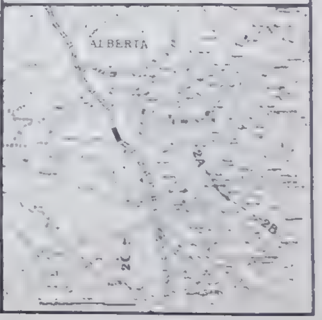
ALBERTA

UPSTREAM M.P. 20
DOWNSTREAM M.P.

APPRD BY
DATE Jan 22/74

SCALE 1" = 2000'
SHEET 42 OF 50

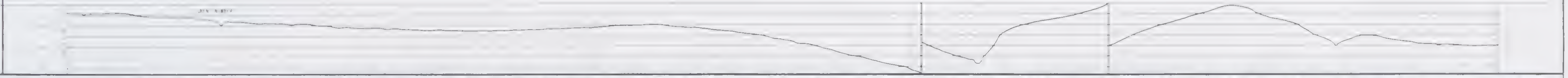
2A-0200-1042

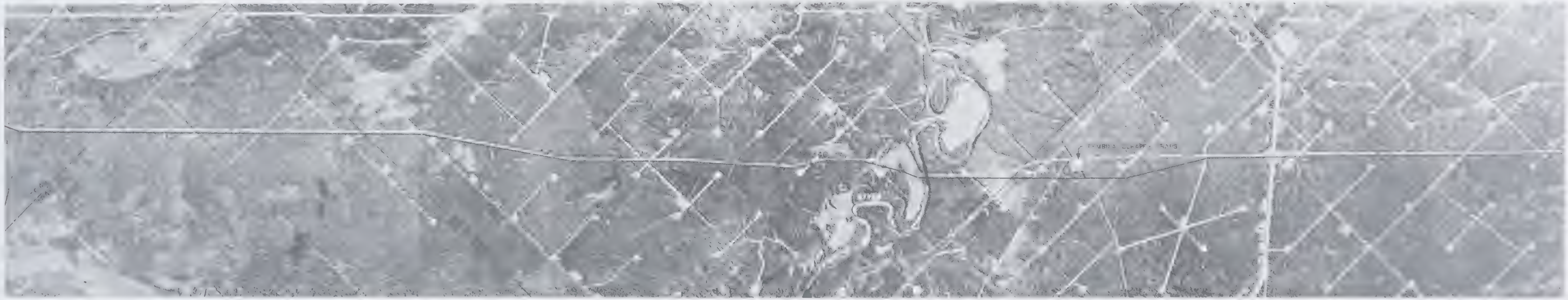


OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

POINT OF INTERSECTION
DRILL HOLE LOCATION
COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
▲ CAMP SITE
STAGING AREA & CAMP SITE
BORROW SITE
■ WHARF
PERMANENT ROAD
TEMPORARY ROAD

PIPE DATA	QUAN
CARRIER 48" OD x 0.720" WT GRADE 70	
HEAVYWALL - 48" OD x 1.034" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
B-0 No buoyancy
B-1 Potential buoyant conditions along segment
B-2 Potential buoyant conditions along portions of the segment

AERIAL PHOTOGRAPHY
ROLL Nº
PHOTO Nº

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE	2100 psi
MAX OPERATING PRESSURE	1680 psi

Nº	DATE	REVISION	APPD. BY	APPD. BY

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

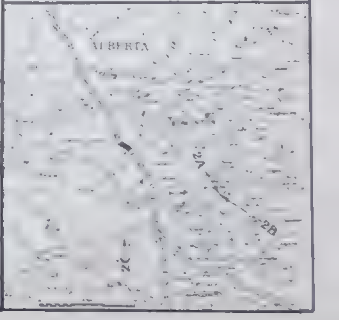
ALBERTA

UPSTREAM M.P.
DOWNSTREAM M.P.

CHKD BY Jan 8/74
APPD BY Jan 21/74

4 50

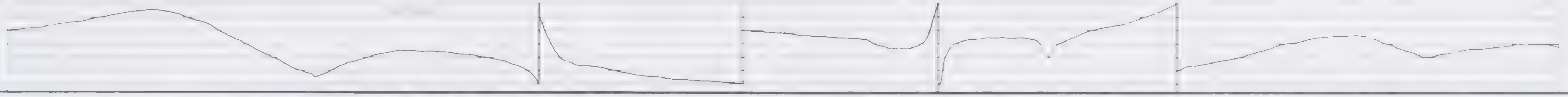
2A-0200-1043

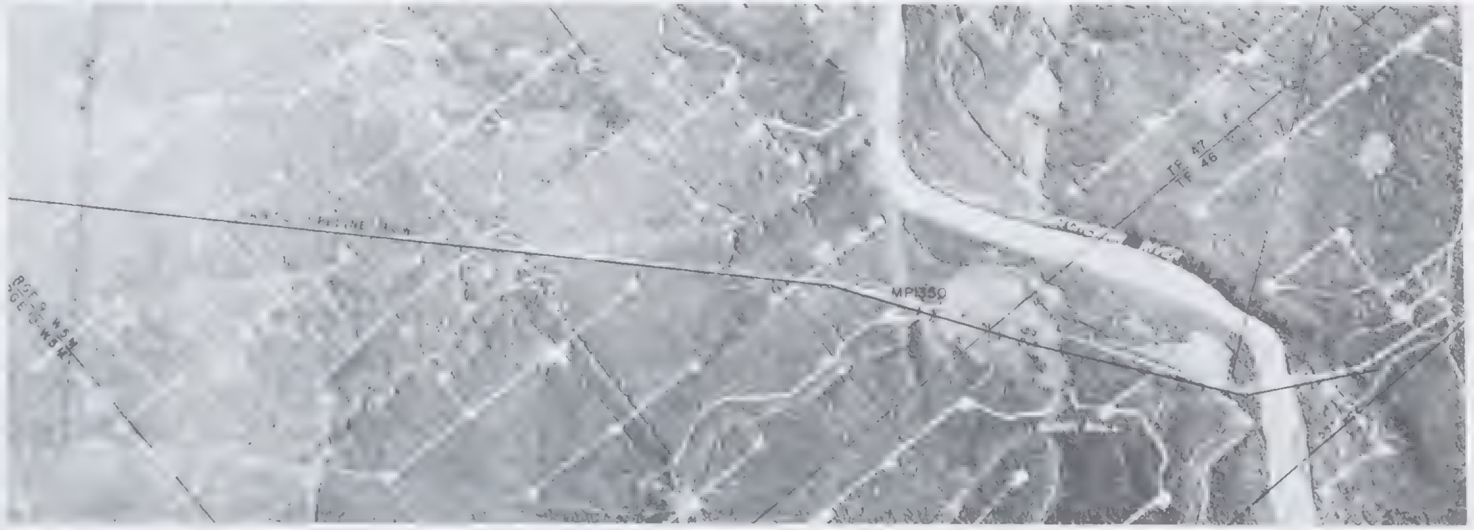


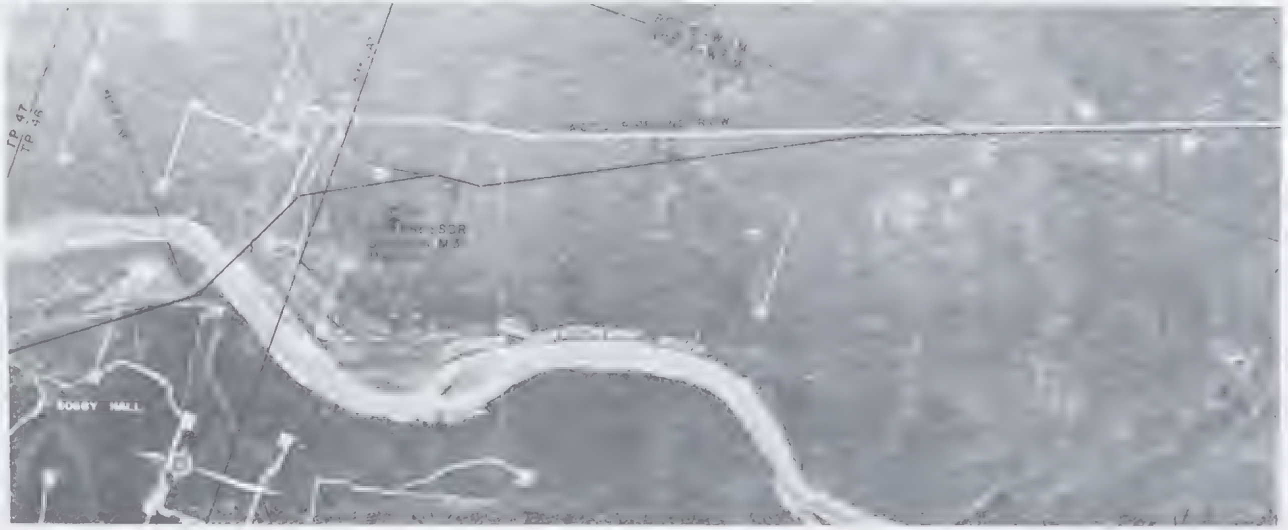
OWNERSHIP

DRILL HOLE DATA

PROFILE







REFERENCE DRAWINGS

CONSTRUCTION DATA

MATCH LINE

MATCH LINE

FOOTAGE THIS SHEET

0.5

SCALE - miles

PIPELINE LEGEND

CARRIER PIPE	POINT OF INTERSECTION	PERMANENT ROAD
CARRIER PIPE	DRILL HOLE LOCATION	TEMPORARY ROAD
BERM BREAK	WARNING SIGN	HELIPAD
SWAMP WEIGHT	MILEPOST SIGN AIRCRAFT	MEASURING STATION
RIVER WEIGHT	CHAINAGE EQUATION	COMMUNICATIONS TOWER
[illegible] ANCHOR	[illegible]	SIDE VALVE
SCREW ANCHOR	AIR STRIP	WINTER TRAIL
HEAVY WALL PIPE	STORAGE OR STAGING AREA	
CASING PIPE	CAMP SITE	
ANCHOR BLOCK [illegible]	STAGING AREA & CAMP SITE	
BLOCK VALVE	BORROW SITE	
TEST LEAD & DIRECTION OF WIRES	WHARF	

PIPE DATA	LGTH
CARRIER - 48" OD x 0.720" WT GRADE 70	
HEAVYWALL - 48" OD x 1.034" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	BEGIN Nº

REFERENCE DRAWINGS	DWG. Nº

GENERAL NOTES
SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 3.0 FEET

BUOYANCY LEGEND
B-0 No buoyancy
B-1 Potential buoyant conditions [illegible]
B-2 [illegible] and along portions of [illegible]

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nº
CR73156	152-156
CR[illegible]	[illegible]

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE [illegible]

MAX OPERATING PRESSURE 68[illegible]

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. 46

DOWNSTREAM M.P.

4-[illegible]/74

[illegible]-23/74

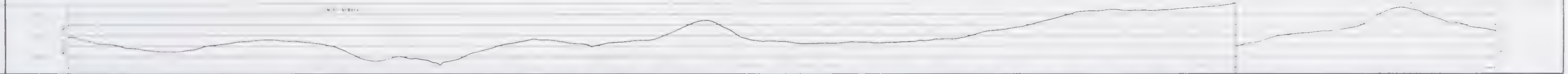
44 50

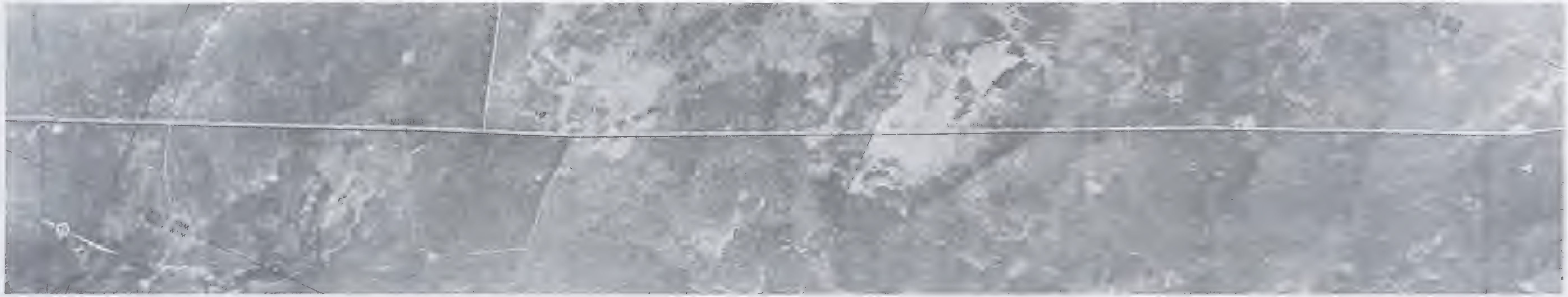
2A-0200-1044

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE miles

PIPELINE LEGEND

TEMPORARY ROAD

COMPRESSOR STATION

STORAGE OR STAGING AREA

CARRIER - 48" O.D. x 0.720" W.T. GRADE 70	
HEAVYWALL - 48" O.D. x 1.034" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES

ALIGNMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE

MINIMUM DEPTH OF COVER = 2.5 FEET

AERIAL PHOTOGRAPHY

CR 13156 | 141 - 15

OPERATING PERMIT Nº

CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE

MAX. OPERATING PRESSURE 68 ...

Nº	DATE	REVISION	APPD BY	APPD BY

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

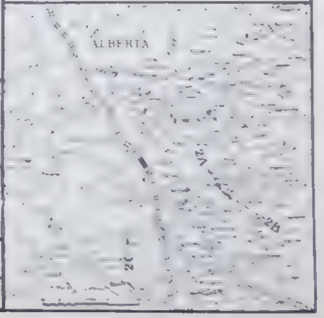
ALBERTA

UPSTREAM M.P.

DOWNSTREAM M.P.

SHEET 45 - 50

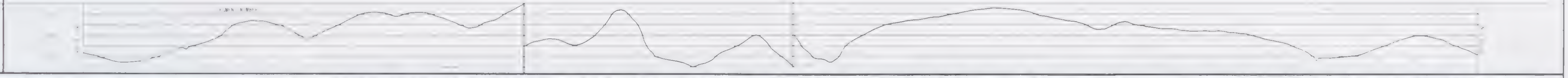
2A-0200-1045

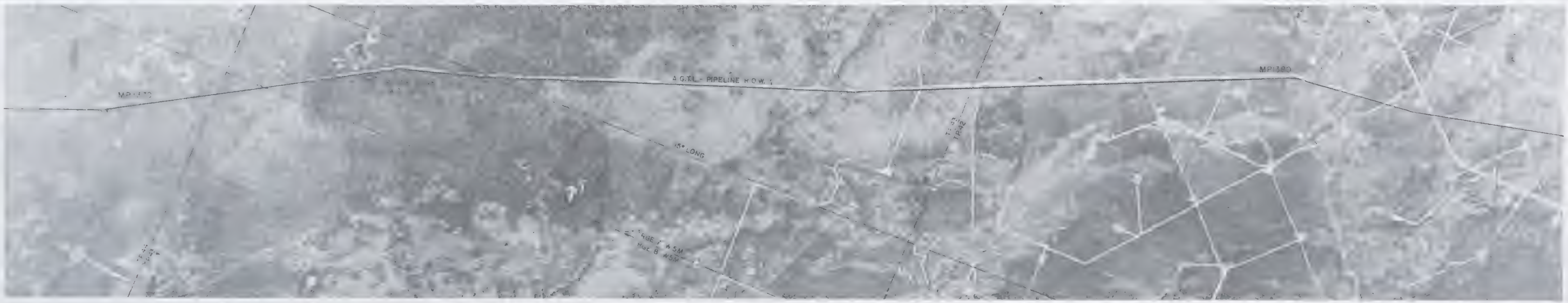


OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

PIPELINE LEGEND

WARNING SIGN
COMPRESSOR STATION
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
HELIPAD

PIPE DATA

MATERIALS

DESCRIPTION

REQ'N Nº

REFERENCE DRAWINGS

DWG Nº

GENERAL NOTES

MINIMUM DEPTH OF COVER

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CR 73156	129 140

OPERATING LICENSE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE

MAX OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.

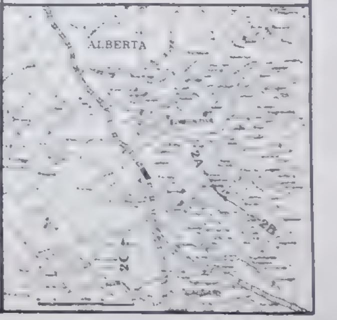
DOWNSTREAM M.P.

CHKD BY

APPD BY

46 · 50

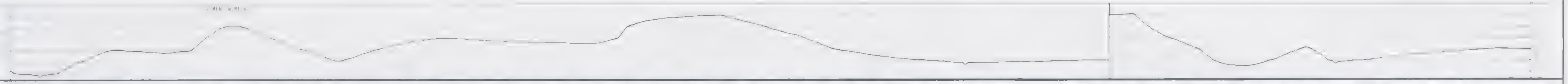
2A-0200-1046

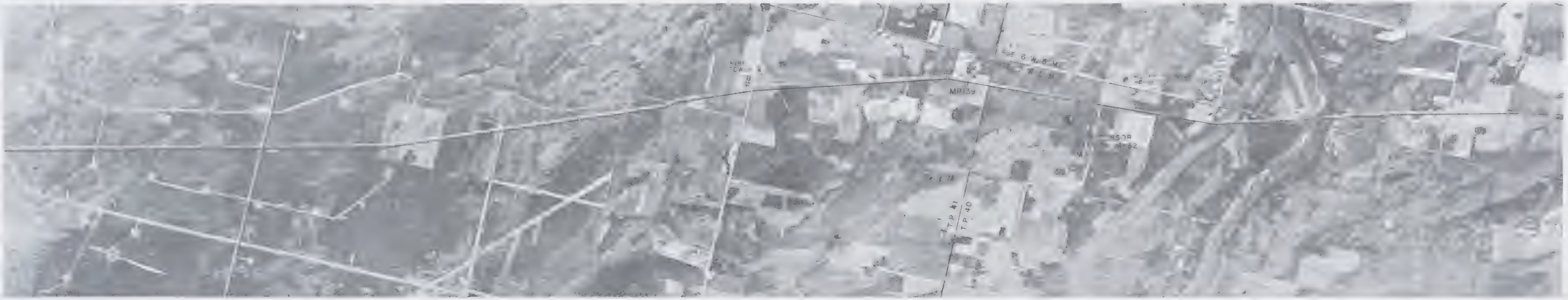


OWNERSHIP

DRILL HOLE DATA

PROFILE





N LINE 1303	1 0100 0003	4 0 00 0003	8 0100 0003	4 0100 3010	0403 1000 0100 0003	4 0210 1059	4 0100 0003	N LINE 1304

SHEET

05

SCALE MILES

PIPELINE LEGEND

- ANCHOR PIPE
- ANCHOR PIPE
- BERM BREAK
- SWAMP WEIGHT
- RIVER WEIGHT
- ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- TEST & DIRECTION OF
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- MARKER LOCATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- COMMUNICATIONS TOWER
- SIDE VALVE
- WINTER TRAIL

PIPE DATA	
CARRIER - 48" OD x 0.720" WT GRADE 70	
HEAVYWALL - 48" OD x 1.034" WT GRADE 65	

COATING DATA

QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
B-0 No buoyancy
B-1 Potential buoyant conditions along segment
B-2 Potential buoyant conditions along portions of segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CR 73156	118 128

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE	2100 psi
MAX OPERATING PRESSURE	1680 psi

NORTHERN Engineering Services Company Limited

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA

ENGINEERS FOR

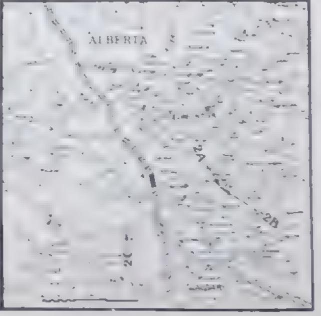
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

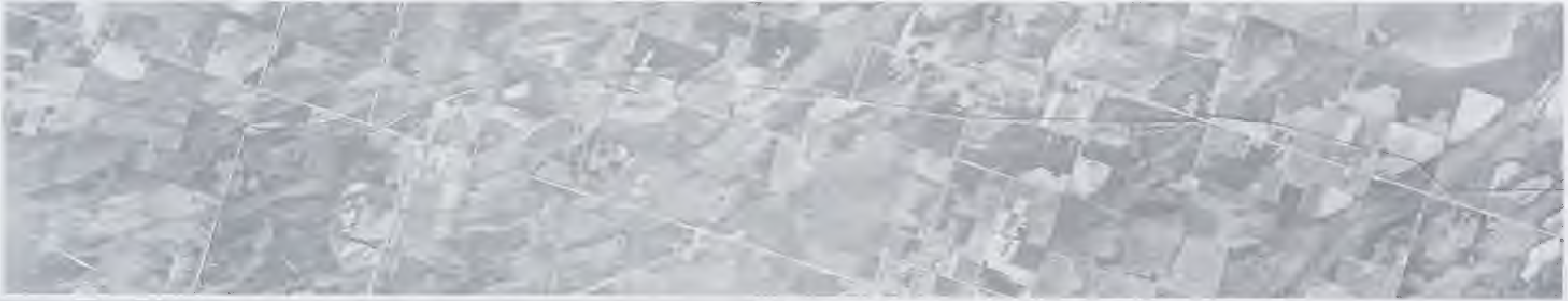
ALBERTA

UPSTREAM M.P.
DOWNSTREAM M.P.

CHKD BY		Jan 1974
APPRD BY		Jan 22/74
SCALE 1:2000	SHEET 47 OF 50	2A-0200-1047



DRILL HOLE DATA



PIPELINE LEGEND

PERMANENT ROAD

TEMPORARY ROAD

STORAGE OR STAGING AREA

CAMP SITE

STAGING AREA & CAMP SITE

BORROW SITE

CARRIER 48" OD x 0.720" WT GRADE 70

HEAVYWALL - 48" OD x 1.034" WT GRADE 65

1 SEGMENT MILEPOST EQUALS [illegible] MILEPOST PLUS CHAINAGE VALUE

2 MINIMUM DEPTH OF COVER = 2.5 FEET

[illegible] LEGEND

CONSTRUCTION PERMIT No

MIN TEST PRESSURE

MAX OPERATING PRESSURE

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.

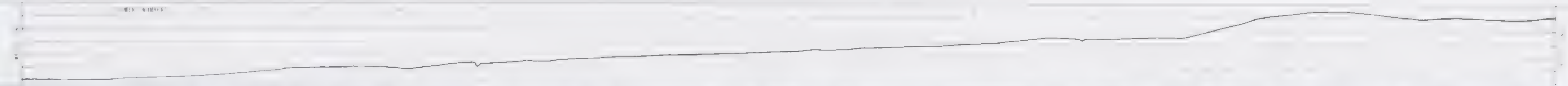
DOWNSTREAM M.P. 128

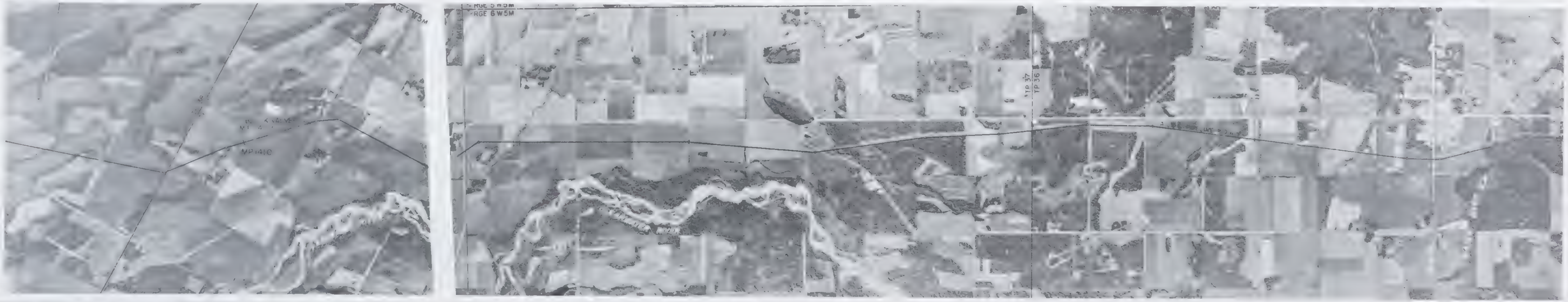
48 50

2A-0200-1048

OWNERSHIP

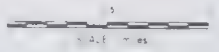
DRILL HOLE DATA





CONSTRUCTION DATA

FOOTAGE THIS SHEET



PIPELINE LEGEND

POINT OF INTERSECTION		HELIPAD
DRILL HOLE LOCATION		
WARNING SIGN		
COMPRESSOR STATION		
AIR STRIP		
STORAGE OR STAGING AREA		
CAMP SITE		
STAGING AREA & CAMP SITE		
BORROW SITE		
WHARF		

PIPE DATA	QUAN
CARRIER - 48" OD x 0.720" W.T. GRADE 70	
HEAVYWALL - 48" OD x 1.034" W.T. GRADE 65	

COATING DATA

QUAN	DESCRIPTION	BEOM Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2 MINIMUM DEPTH OF COVER - 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

ROLL Nº
PHOTO Nº

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº
MIN. TEST PRESSURE
MAX. OPERATING PRESSURE 1,680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.
DOWNSTREAM M.P.

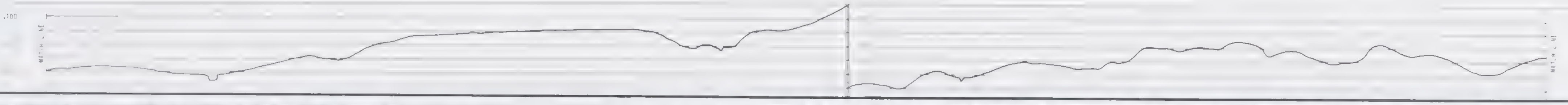
49 50

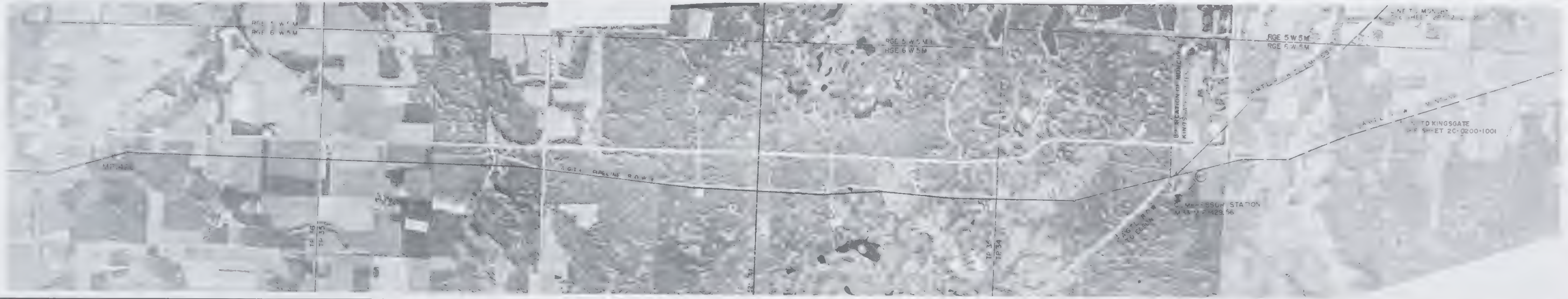
2A-0200-1049

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

REFERENCE DRAWINGS & NOTES

MATCH LINE 1419.33

4-0210-1000

4-0100-0003

4-0100-0003

0403.000
MATCH LINE 1428.56

FOOTAGE THIS SHEET

5
SCALE (miles)

PIPELINE LEGEND

ARMOR PIPE	POINT OF INTERSECTION	PERMANENT ROAD
ARMOR PIPE	DRILL HOLE LOCATION	TEMPORARY ROAD
BERM BREAK	WARNING SIGN	HELIPAD
SWAMP WEIGHT	MILEPOST SIGN AIRCRAFT	MEASURING STATION
RIVER WEIGHT	CHAINAGE EQUATION	COMMUNICATIONS TOWER
FROST ANCHOR	COMPRESSOR STATION	SIDE VALVE
SCREW ANCHOR	AIR STRIP	WINTER TRAIL
HEAVY WALL PIPE	STORAGE OR STAGING AREA	
CASING PIPE	CAMP SITE	
ANCHOR BLOCK (GROUND)	STAGING AREA & CAMP SITE	
[illegible]	[illegible]	
[illegible]	WHARF	

PIPE DATA	QUAN
CARRIER - 48" O.D. x 0.720" W.T. GRADE 70	
HEAVYWALL - 48" O.D. x 1.034" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
B [illegible]
B-1 Percent & buoyant soil [illegible] along segment
B-2 Percent & buoyant conditions along portions of the segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CR73156	66-84

OPERATING LICENCE Nº.
CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE	2100 p.s.i.
MAX OPERATING PRESSURE	1680 p.s.i.

Nº	DATE	REVISION	APPD. BY	APPD. BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. 1419
DOWNSTREAM M.P. 1428.56

DRAWN	DATE
CHECKED	20
APPROVED	20

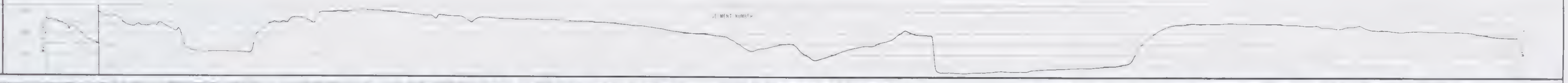
SCALE 1:2000
SHEET 50 OF 50

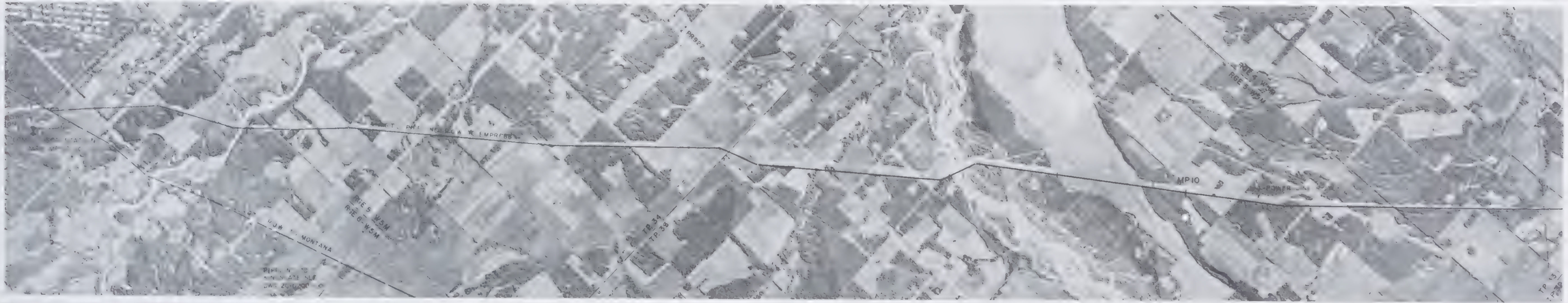
2A-0200-1050

OWNERSHIP

DRILL HOLE DATA

PROFILE





FOOTAGE THIS SHEET

SCALE , miles

PIPELINE LEGEND

- BERM BREAK
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- ANCHOR BLOCK
- TEST LEAD & DIRECTION
- POINT OF INTERSECTION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- STAGING AREA & CAMP SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- COMMUNICATIONS TOWER
- SIDE VALVE
- WINTER TRAIL

CARRIER - 42" OD x 0.630" WT GRADE 70
HEAVY WALL - 42" OD x 0.906" WT GRADE 65

COATING DATA

QUAN	DESCRIPTION

1. SEGMENT MILEPOST EQUALS WATCHLINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

B-0 No buoyancy
B-1 Potential buoyant conditions along segment
B-2 Potential buoyant conditions along portions of the segment

ROLL Nº	PHOTO Nº
CC 73155	1 - 12

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE 2100 psi
MAX OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

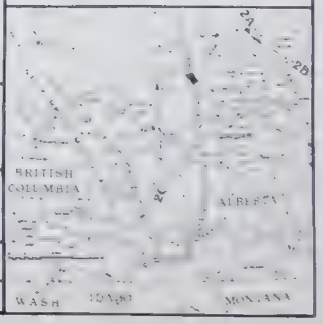
GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

UPSTREAM M.P. 8
DOWNSTREAM M.P.

Jan 22/74

SHEET 1 OF 31

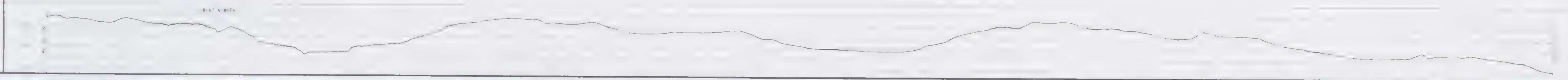
2B-0200-001

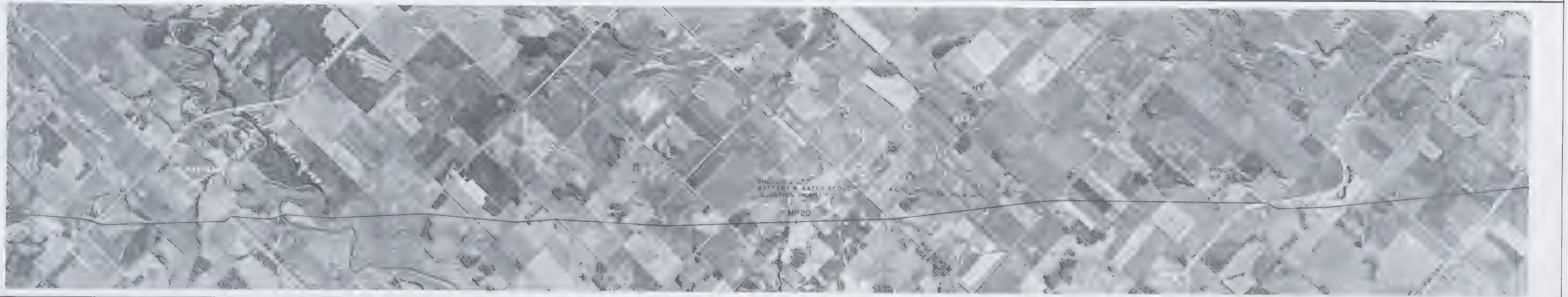


OWNERSHIP

DRILL HOLE DATA

PROFILE





FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

HELIPAD

PIPE DATA	
CARRIER - 42 [illegible] GRADE 70	
HEAVY WALL 42 [illegible] GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

DESCRIPTION

REFERENCE DRAWINGS

GENERAL NOTES
SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER - 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

ROLL Nº PHOTO Nº

CONSTRUCTION PERMIT Nº

MAX. OPERATING PRESSURE [illegible] psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

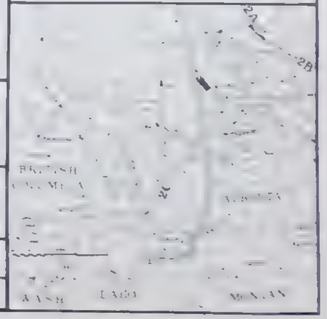
GAS PIPELINE ROUTE ALIGNMENT DATA

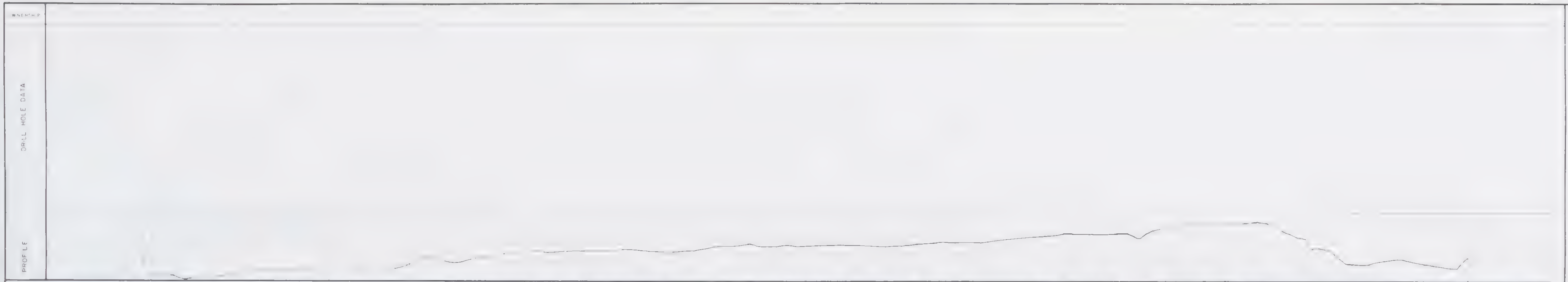
ALBERTA

UPSTREAM M.P. DOWNSTREAM M.P.

3

2B-0200-002





FOOTAGE THIS SHEET

PIPELINE LEGEND

PERMANENT R.O.W.
HELIPAD
METERING STATION
COMMUNICATIONS TOWER
SITE VALVE
WINTER TRAIL

CARRIER 42" O.D. x 0.630 " W.T. GRADE 70	
HEAVYWALL 42 O.D. x 0.905 " W.T. GRADE 65	

COATING DATA

GENERAL NOTES
SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE

AERIAL PHOTOGRAPHY	
Nº	PHOTO Nº
74 55	24 35

MIN. TEST PRESSURE 2100 psi
PRESSURE 1680 psi

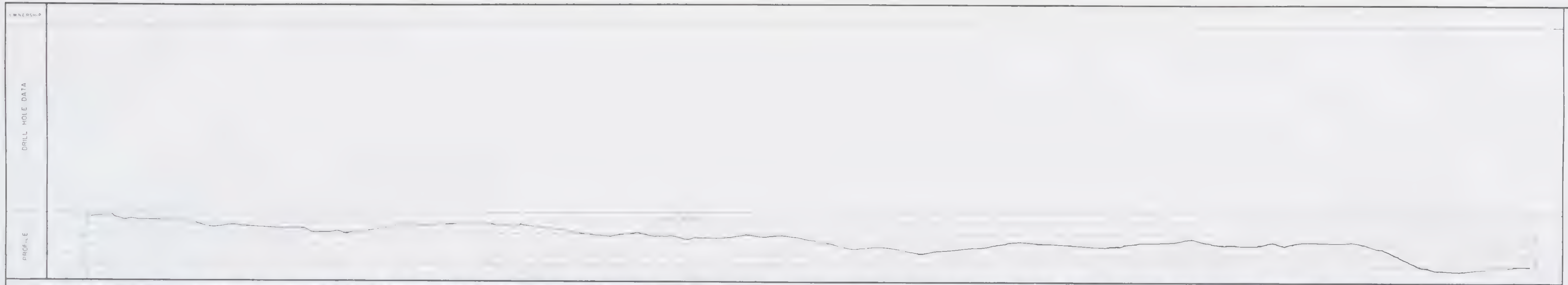
NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

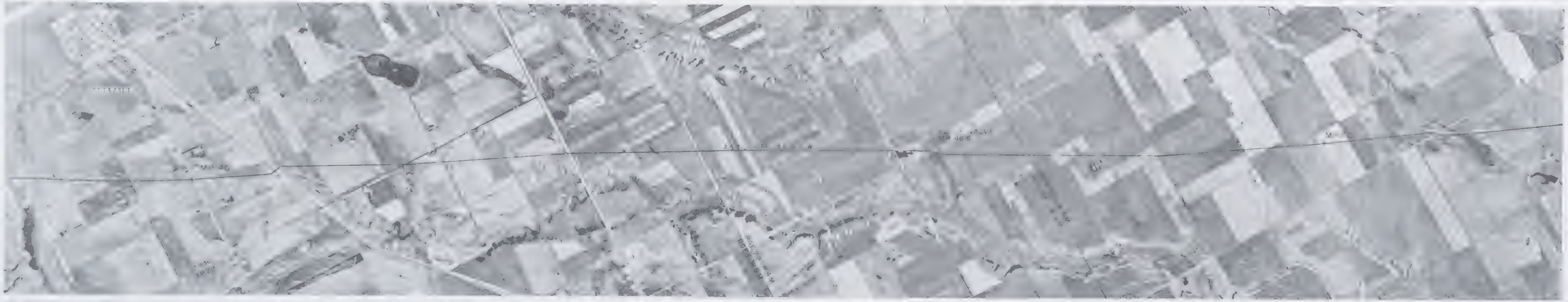
GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

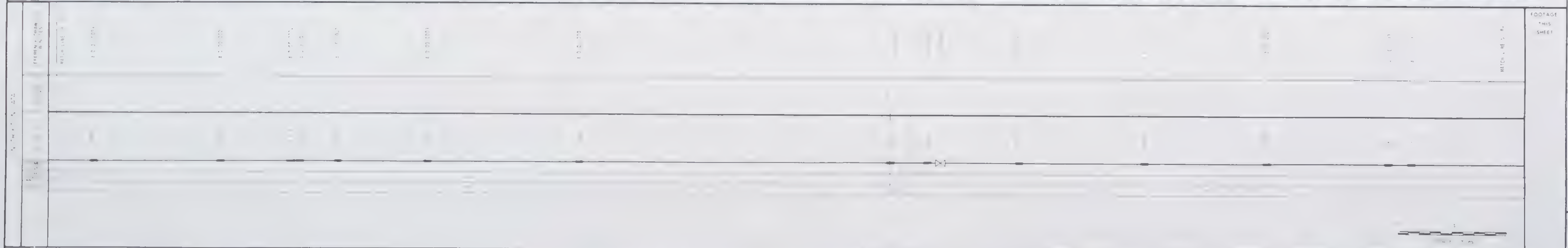
UPSTREAM M.P. .6 DOWNSTREAM M.P.

SCALE 1 : 1000
SHEET 3 OF 31

28-0200-1003







PIPELINE LEGEND

COMPRESSOR STATION
PERMANENT ROAD
TEMPORARY ROAD
SIDE VALVE
WINTER TRAIL
STAGING AREA & CAMP SITE
BORROW SITE

PIPE DATA	QUAN
CARRIER - 42 OD × 0.630 WT GRADE 70	
HEAVYWALL 42 OD × 0.905" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION

REFERENCE DRAWINGS	DWG Nº

2 MINIMUM DEPTH OF COVER = 3.5 FEET

ROLL Nº | PHOTO Nº

CONSTRUCTION PERMIT Nº

MAX. OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. 39

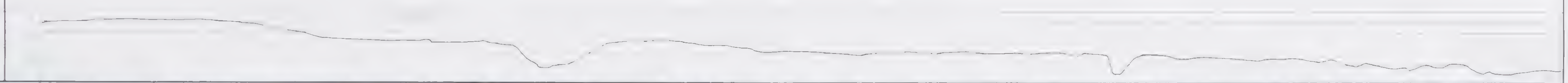
4 3

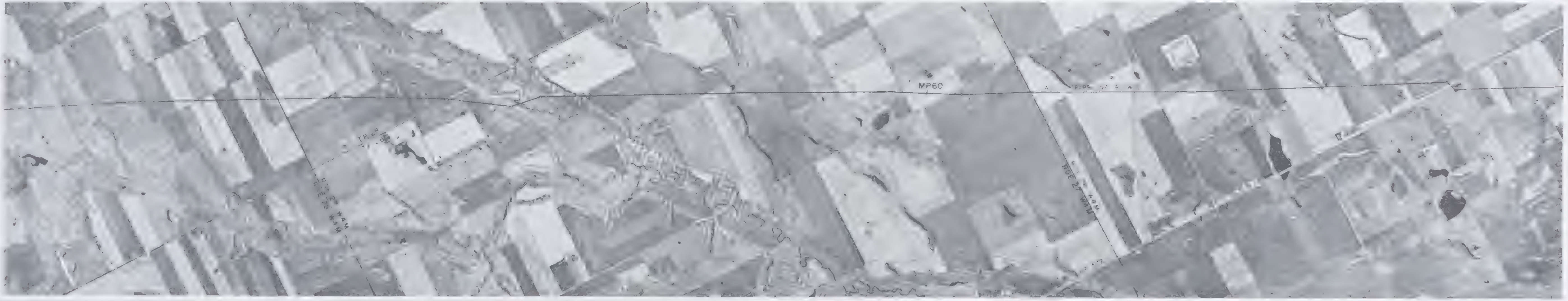
2B-0200-1004

TOWNSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

COMPRESSOR STATION

AIR STRIP

STORAGE OR STAGING AREA

MISCELLANEOUS MATERIAL

REFERENCE DRAWINGS

MINIMUM DEPTH OF COVER 2.5 FEET

BUOYANCY LEGEND

ROLL Nº

PERMIT Nº

CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE

MAX. OPERATING PRESSURE

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

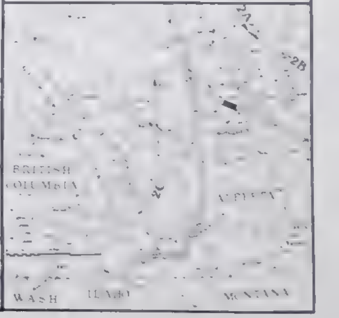
GAS PIPELINE ROUTE ALIGNMENT DATA

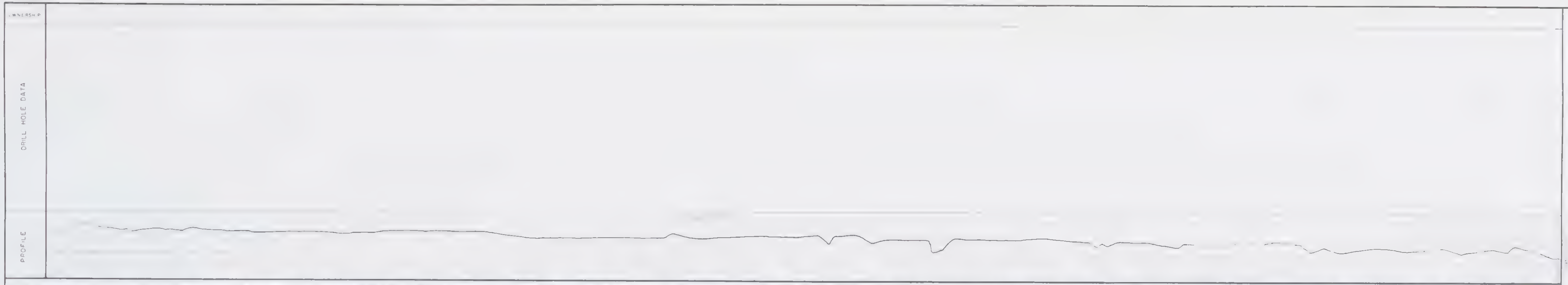
ALBERTA

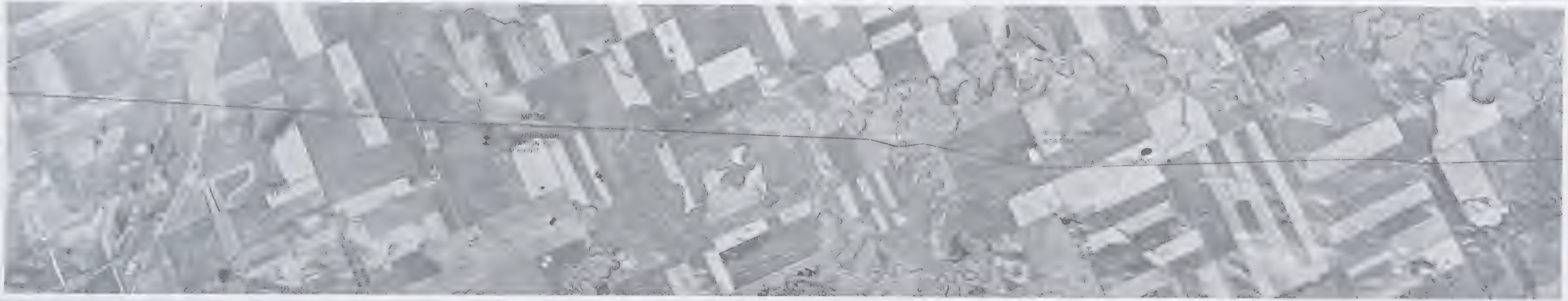
UPSTREAM M.P. ______ DOWNSTREAM M.P. ______

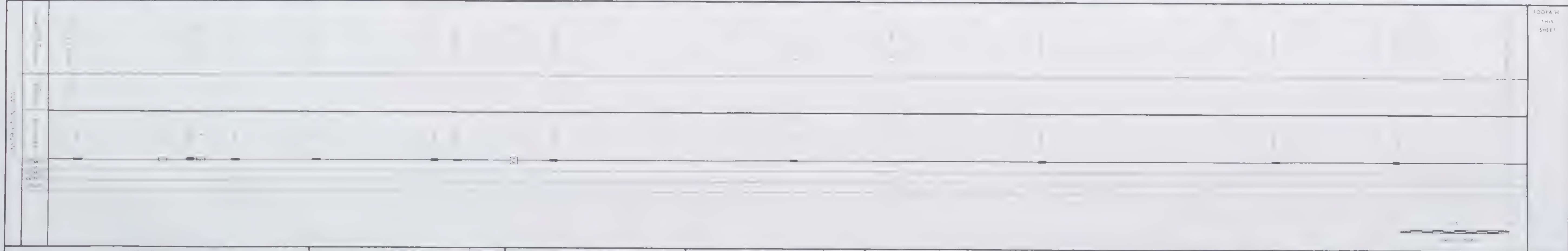
5 31

28-0200-005









PIPELINE LEGEND

PERMANENT ROAD
HELIPAD
STOCKPILE SITE
CAMP SITE
STAGING AREA & CAMP SITE
BORROW SITE

CARRIER 42 OD × 0.63 WT GRADE 70	
HEAVYWALL 42 OD × 0.905 WT GRADE 65	

NOTES

WIPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE

MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

ROLL Nº | PHOTO Nº

PERMIT No. / LICENCE Nº

CONSTRUCTION PERMIT Nº

MAX. OPERATING PRESSURE

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

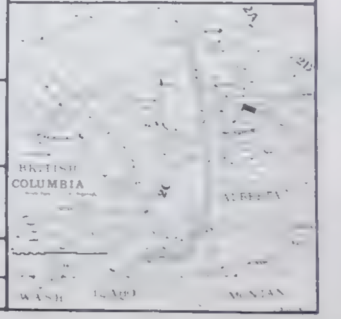
ALBERTA

UPSTREAM M.P.

DOWNSTREAM M.P.

6 31

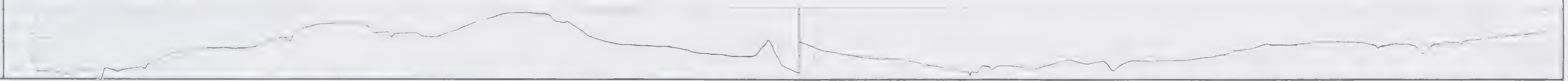
2B-0200-1006

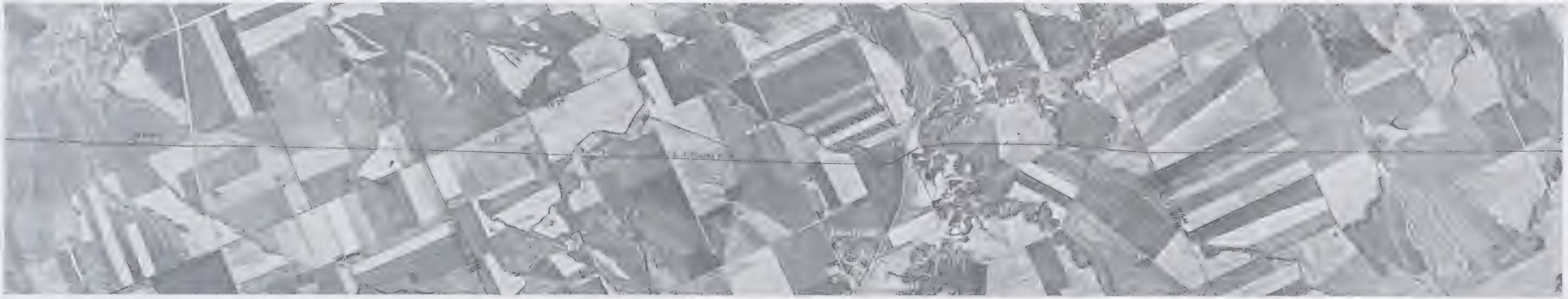


TOWNSHIP

DRILL HOLE DATA

PROFILE





FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

- PERMANENT ROAD
- TEMPORARY ROAD
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- CASING PIPE
- ANCHOR BLOCK
- COMPRESSOR STATION
- AIR STRIP
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF

CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

COATING DATA

QUAN	DESCRIPTION	

SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE

2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

B-0 No buoyancy

ROLL Nº	PHOTO Nº
287-155	69

OPERATING LICENCE Nº

MIN TEST PRESSURE 2100 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

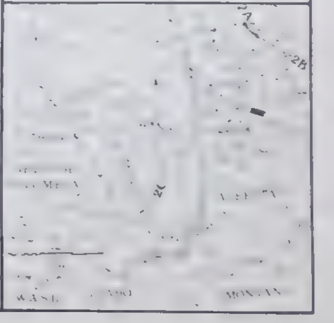
ALBERTA

UPSTREAM M.P.
DOWNSTREAM M.P.

CHKD BY Jan 22/74

7 3

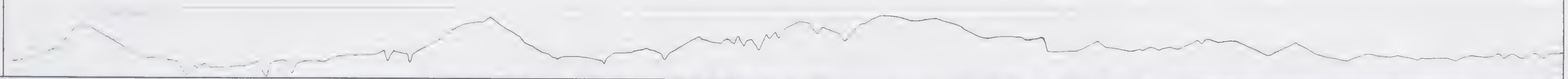
2B-0200-007

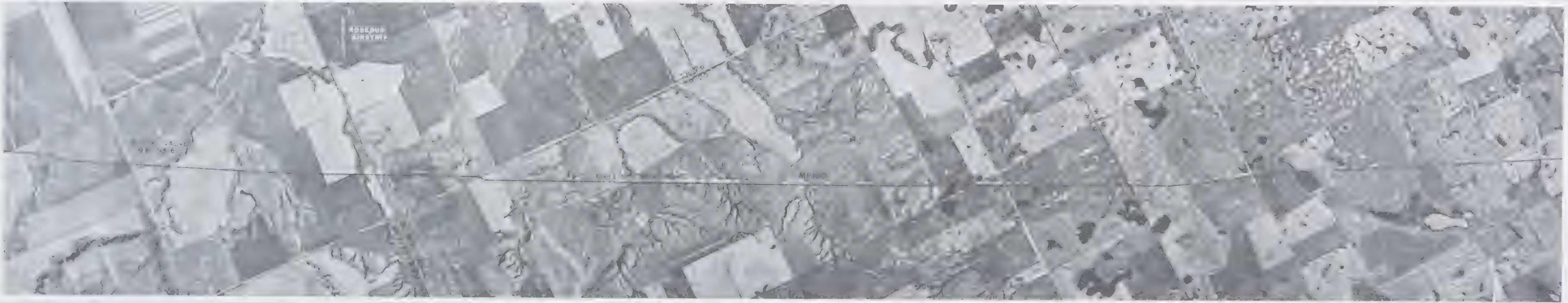


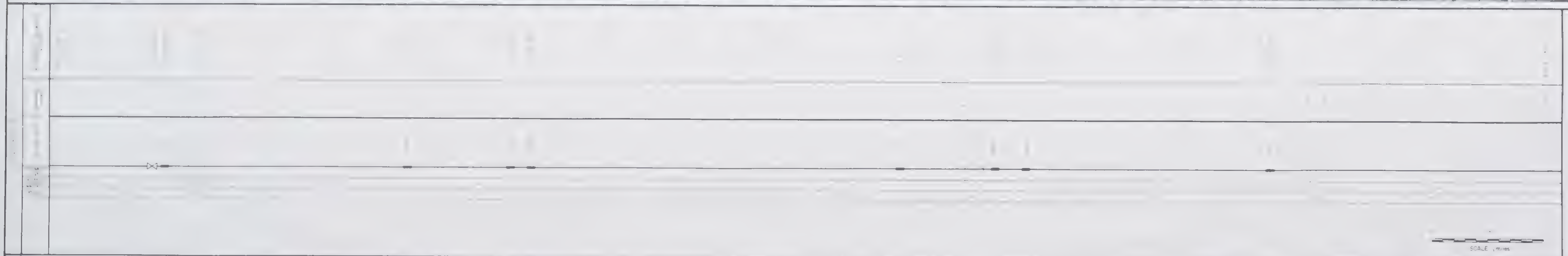
OWNERSHIP

DRILL HOLE DATA

PROFILE







FOOTAGE
THIS
SHEET

SCALE , miles

PIPELINE LEGEND

CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

COATING DATA

QUAN

MILEPOST PLUS CHAINAGE VALUE

MAX OPERATING PRESSURE 68 psi

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

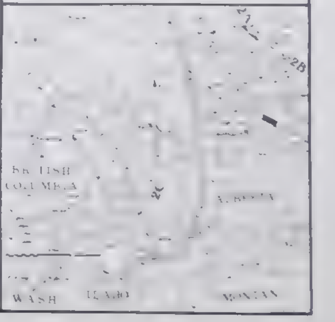
GAS PIPELINE ROUTE ALIGNMENT DATA

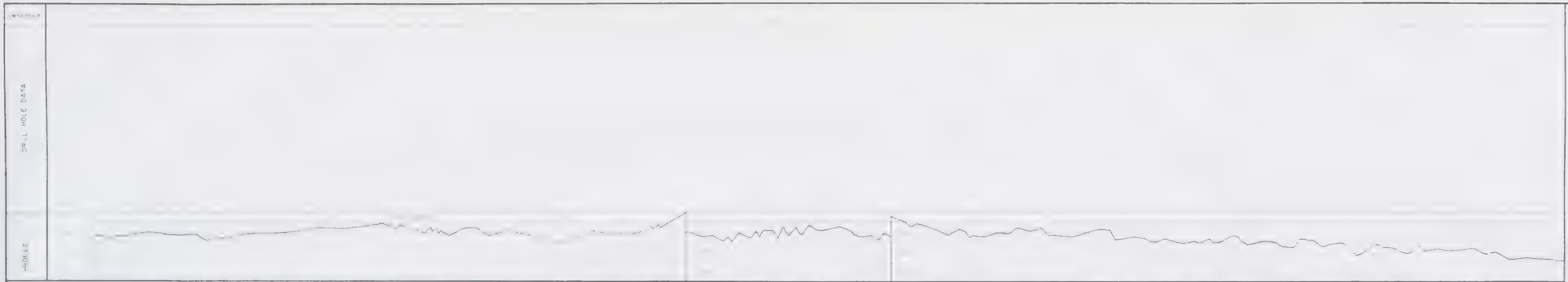
ALBERTA

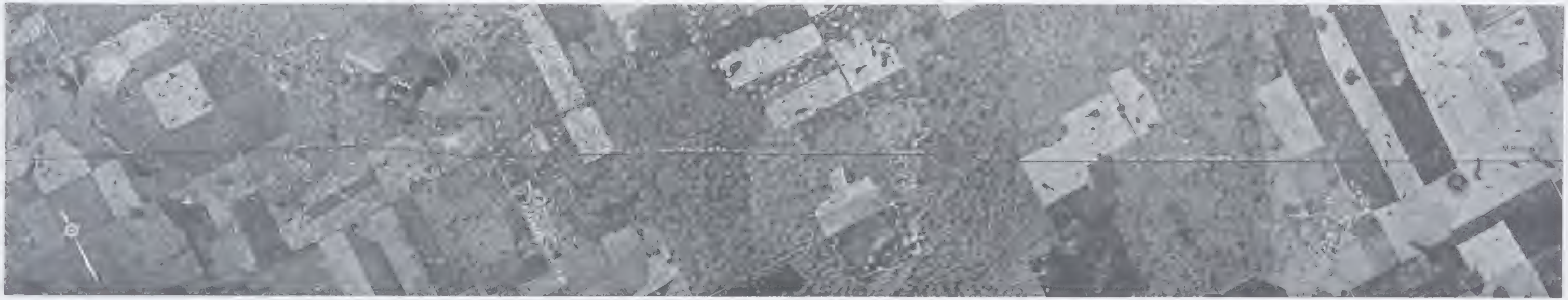
UPSTREAM M.P. ______ DOWNSTREAM M.P. ______

8 31

28 0200-008







PIPELINE LEGEND

PERMANENT ROAD
TEMPORARY ROAD
WINTER TRAIL
STAGING AREA
BORROW SITE

PIPE DATA	QUAN
CARRIER - 42" O.D. x 0.530" W.T. GRADE 70	
HEAVYWALL - 42" O.D. x 0.900" W.T. GRADE 65	

QUAN	MISCELLANEOUS MATERIAL DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
B.0. No Buoyancy

AERIAL PHOTOGRAPHY	
ROLL Nº	PHOTO Nº

OPERATING PERMIT Nº
CONSTRUCTION PERMIT
MIN. TEST PRESSURE
MAX. OPERATING PRESSURE 68

Nº	DATE	REVISION	APPD. BY	APPD. BY

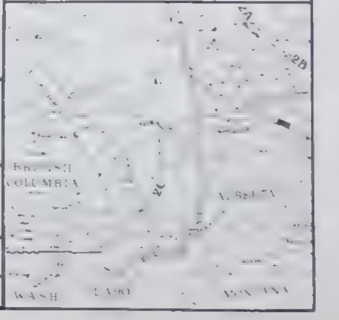
NORTHERN ENGINEERING SERVICES COMPANY LIMITED
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

UPSTREAM M.P. DOWNSTREAM M.P.

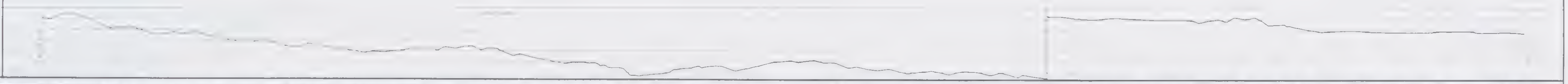
9 31

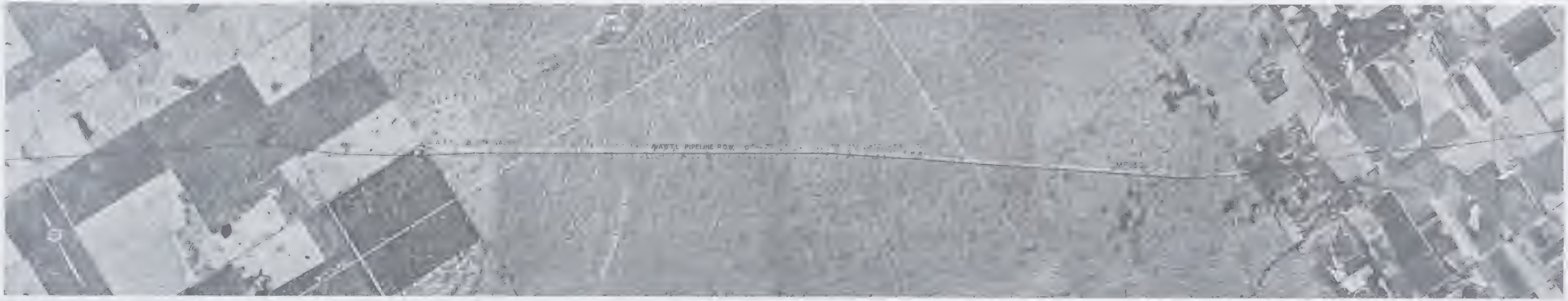
28-0200-009



DRILL HOLE DATA

PROFILE





FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
PERMANENT ROAD
TEMPORARY ROAD

CARRIER - 42" OD x 0.630" WT GRADE 70
HEAVYWALL 42" OD x .909" WT GRADE 65

COATING DATA

QUAN	DESCRIPTION	REQN Nº

1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER - 2.5 FEET

BUOYANCY LEGEND

PERMIT NO. EASEMENT

CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE	2100 psi
MAX. OPERATING PRESSURE	1680 psi

NORTHERN Engineering Services Company Limited

COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.

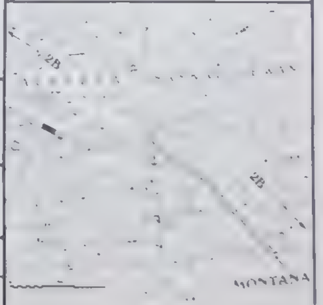
DOWNSTREAM M.P.

CHEC. BY

APPR. BY

SHEET 10 OF 31

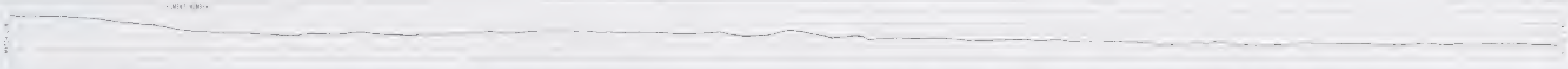
28-0200-1010

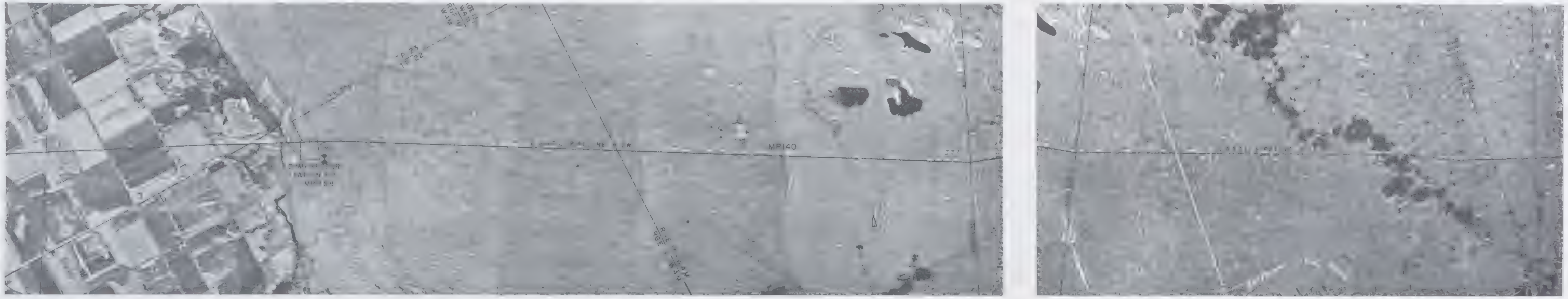


OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

REFERENCE DRAWING & NOTES

MATCH LINE 133.35
4 0100 0003
4 0100 0002
4 0100 0003
4 0100 0003
4 02 0 1099
4 02 0 1099
0405 1000
MATCH LINE
MATCH LINE
4 0100 -002
MATCH LINE 145.88

FOOTAGE
THIS
SHEET

SCALE (miles)

PIPELINE LEGEND

- BERM BREAK
- SWAMP WEIGHT
- FROST ANCHOR
- CASING PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- TEST CAP & DIRECTION OF WAVES
- POINT OF INTERSECTION
- WARNING SIGN
- COMPRESSOR STATION
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- MEASURING STATION
- COMMUNICATIONS TOWER
- SIDE VALVE

PIPE DATA	QUAN
CARRIER - 42" OD x 0.630" WT GRADE 70	

MISCELLANEOUS MATERIAL

REFERENCE DRAWINGS	DWG No

GENERAL NOTES
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

ROLL No	PHOTO Nos
CR73155	118 - 124

CONSTRUCTION PERMIT No

MIN TEST PRESSURE

MAX OPERATING PRESSURE

No	DATE	REVISION	APPD BY	APPD BY

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

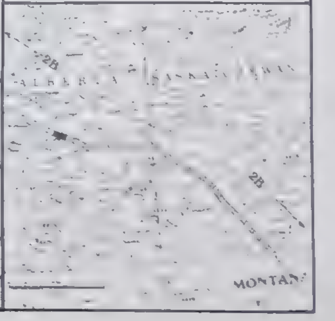
GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

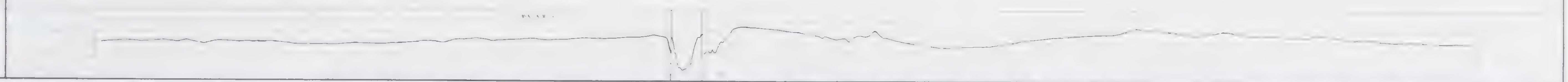
UPSTREAM M.P. 133
DOWNSTREAM M.P. 146

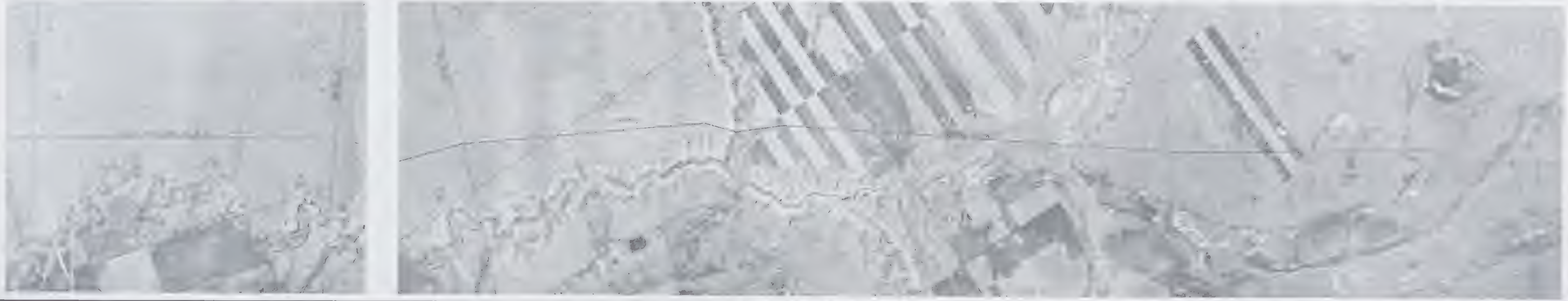
31

28-0200-1011



DRILL HOLE DATA





FOOTAGE THIS SHEET

PIPELINE LEGEND

TEMPORARY ROAD

CAMP SITE

STAGING AREA & CAMP SITE

CARRIER - 42" OD x 0.630" WT GRADE 70

HEAVYWALL - 42" OD x 0.905" WT GRADE 65

SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE

2 MINIMUM DEPTH OF COVER = 2.5 FEET

OPERATING LICENCE NO.

CONSTRUCTION PERMIT NO.

MIN. TEST PRESSURE | 2100 psi

MAX. OPERATING PRESSURE | 1680 psi

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.

DOWNSTREAM M.P.

APPD. BY

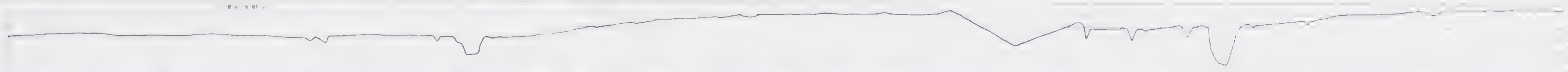
2 31

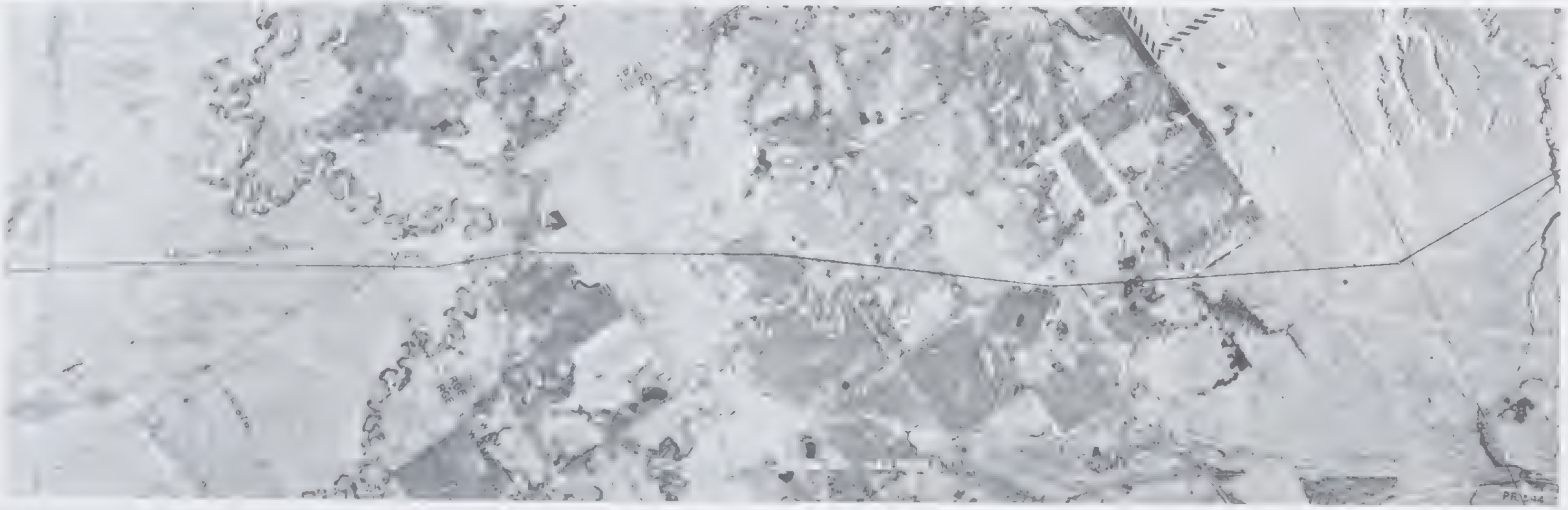
28-0200-1012

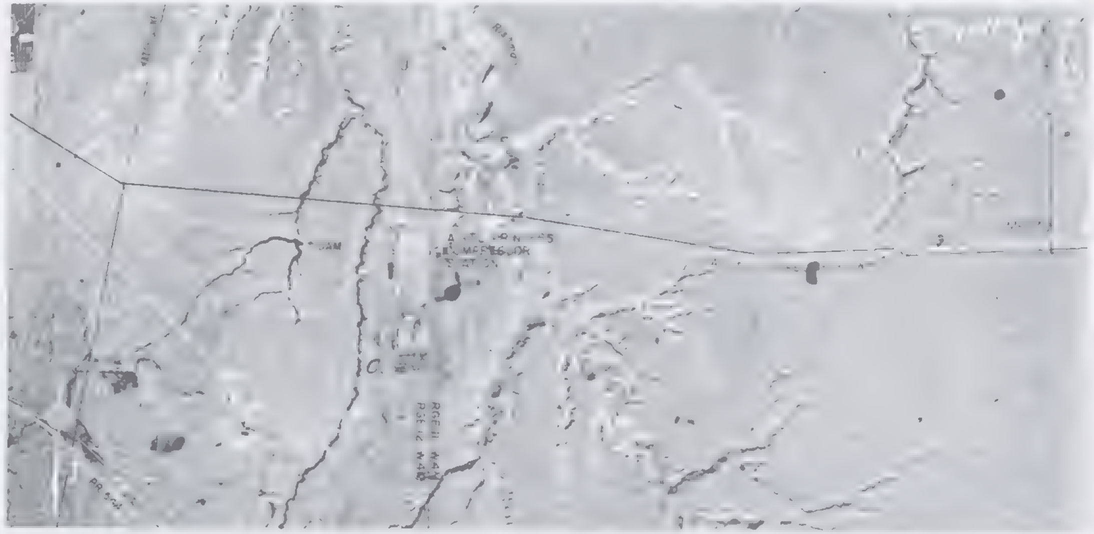
OWNERSHIP

DRILL HOLE DATA

PROFILE







FOOTAGE THIS SHEET

PIPELINE LEGEND

COMPRESSOR STATION

STORAGE OR STAGING AREA

CAMP SITE

BORROW SITE

PERMANENT ROAD

TEMPORARY ROAD

COATING DATA

MINIMUM DEPTH OF COVER = 2.5 FEET

ROLL Nº

CONSTRUCTION PERMIT Nº

68 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.

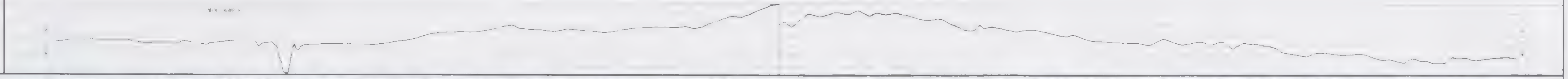
DOWNSTREAM M.P.

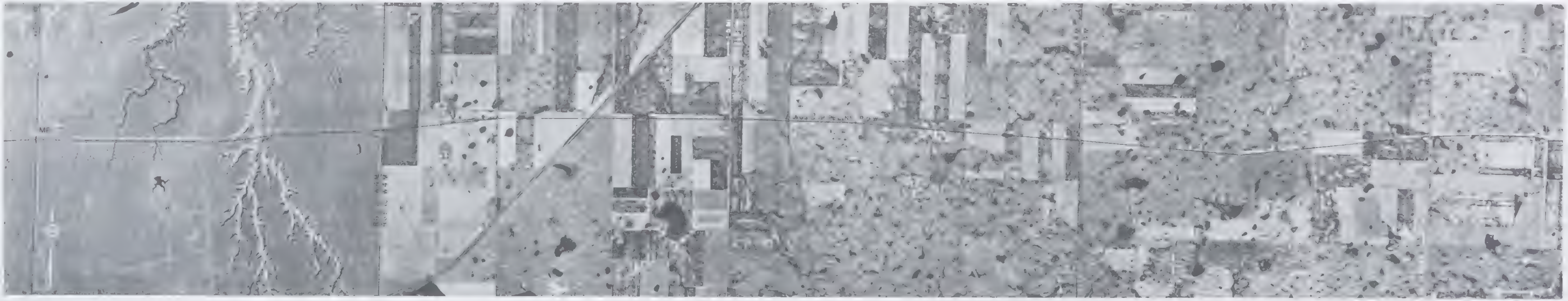
3 31

2B-0200-1013

OWNERSHIP

DRILL HOLE DATA





CONSTRUCTION DATA

REFERENCE DRAWINGS & NOTES

MATCH LINE 2 00

4 0100 0003

4 0210 1059

4 0100 0003

4 0100 0002

4 0100 0003

0300 6000

4 0100 0003

4 0100 0003

4 0100 0003

4 0100 0003

4 0100 0003

MATCH LINE 183 15

FOOTAGE THIS SHEET

SCALE (MILES)

PIPELINE LEGEND

- CARRIER PIPE
- CARRIER PIPE
- BERM BREAK
- SWAMP WEIGHT
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- TEST LEAD & DIRECTION OF WIRES
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- [illegible]
- [illegible]
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- MEASURING STATION
- [illegible]
- SIDE VALVE
- WINTER TRAIL

CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL 42" OD x 0.905" WT GRADE 65	

COATING DATA

QUAN	DESCRIPTION

2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

B-1 Potential buoyant conditions along segment

CR73153	23 30

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE

MAX. OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.

DOWNSTREAM M.P.

Jan 24/74

12/74

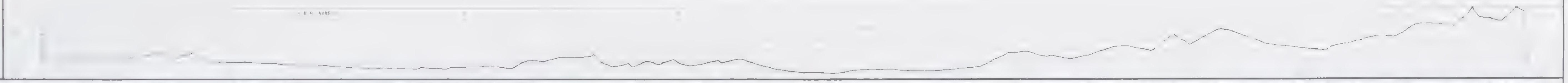
14 · 31

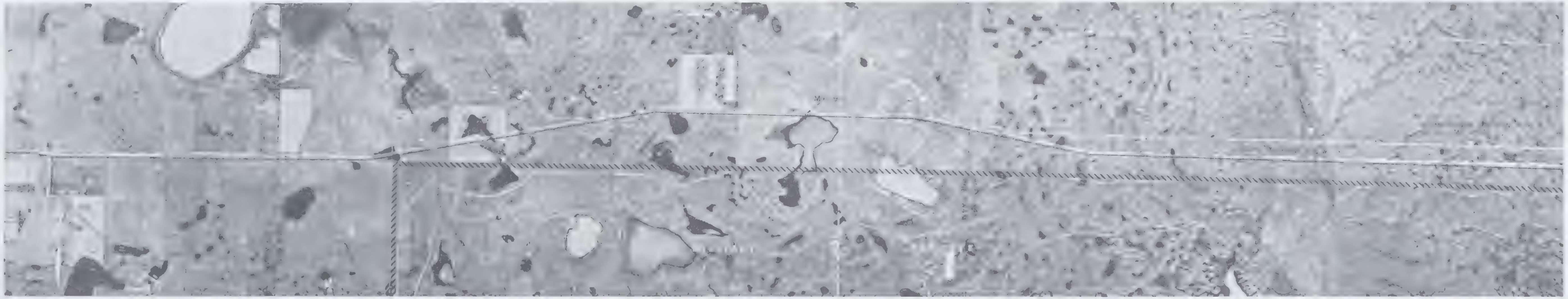
2B-0200-1014

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

PIPELINE LEGEND

- CARRIER PIPE
- CARRIER PIPE
- BERM BREAK
- SWAMP WEIGHT
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- TEST FAIL & DIRECTION
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- MILEPOST SIGN AIRCRAFT
- MARKER LOCATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- MEASURING STATION
- COMMUNICATIONS TOWER
- SIDE VALVE
- WINTER TRAIL

PIPE DATA	
CARRIER - 42"OD x 0.430" W.T. GRADE 70	
HEAVYWALL 42"OD x 0.905 W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWING	DWG Nº

GENERAL NOTES:

1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

B-0 No buoyancy

B-1 Potential buoyant conditions along segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nº
CR13153	3 40

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE

MAX. OPERATING PRESSURE 1680 psi

Nº	DATE	REVISION	APPD BY	APPD BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.

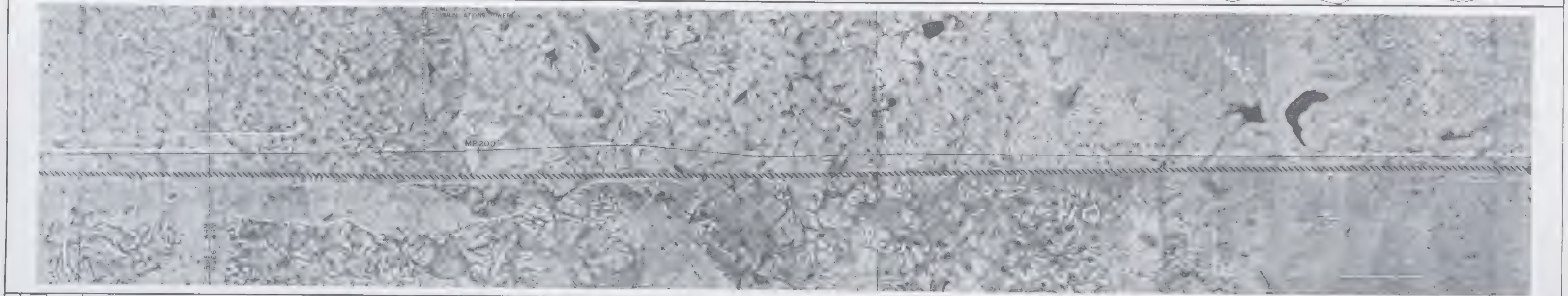
DOWNSTREAM M.P.

.5 31

28-0200-.0.5

WNERSHIP

DRILL HOLE DATA



PIPELINE LEGEND

COMPRESSOR STATION

STORAGE OR STAGING AREA

CAMP SITE

STAGING AREA & CAMP SITE

PERMANENT ROAD

TEMPORARY ROAD

PIPE DATA	QUAN
CARRIER - 42 OD x 0.630 WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES

1 SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.

2 MINIMUM DEPTH OF COVER - 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CA73153	41 51

CONSTRUCTION PERMIT Nº

Nº	DATE	REVISION	APPD BY	APPD BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

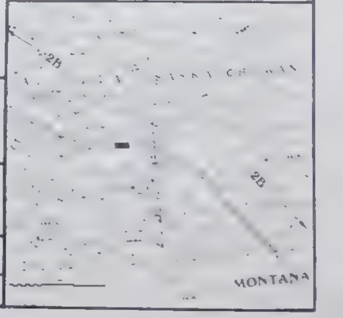
ALBERTA

UPSTREAM M.P. 96

DOWNSTREAM M.P. 203

16 31

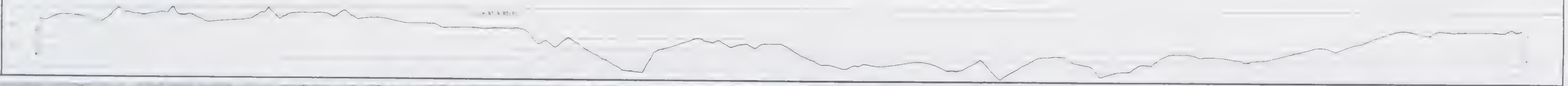
28-0200-1016

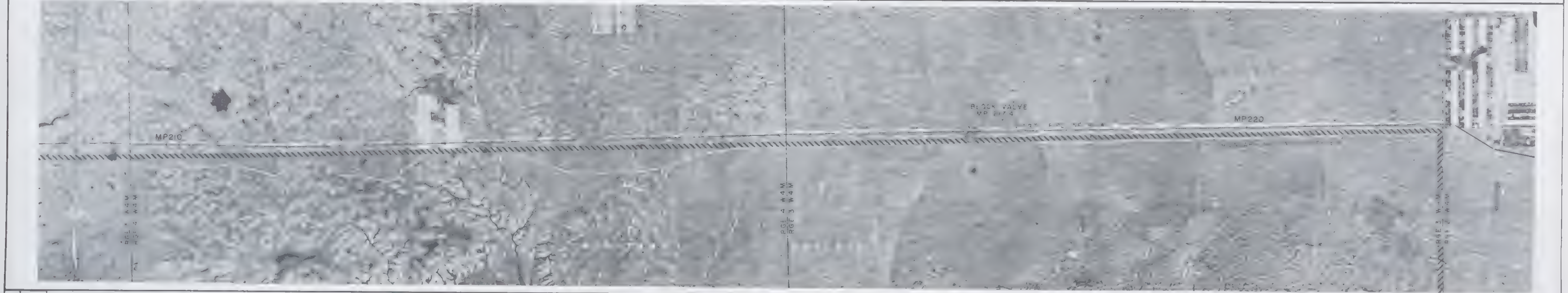


OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

FOOTAGE THIS SHEET

PIPELINE LEGEND

- DRILL HOLE LOCATION
- WARNING SIGN
- MILEPOST SIGN AIRCRAFT
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- TEMPORARY ROAD
- HELIPAD
- MEASURING STATION
- COMMUNICATIONS TOWER
- SIDE VALVE
- WINTER TRAIL

PIPE DATA	
42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 2.5 FEET

DUCTANCY LEGEND

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº

Nº	DATE	REVISION	APPD BY	APPD BY

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

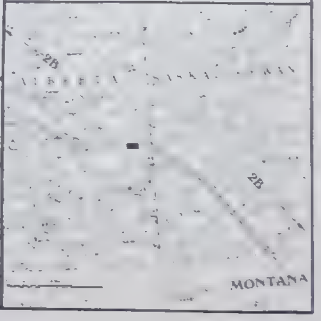
GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

UPSTREAM M.P. 209
DOWNSTREAM M.P.

Jan 22/74
Jan 22/74

17 31

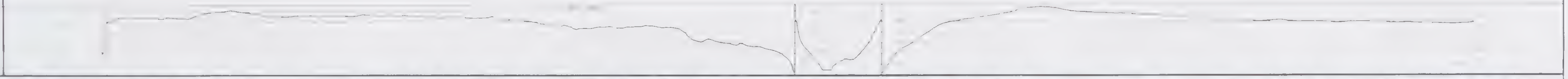
28-0200-1017

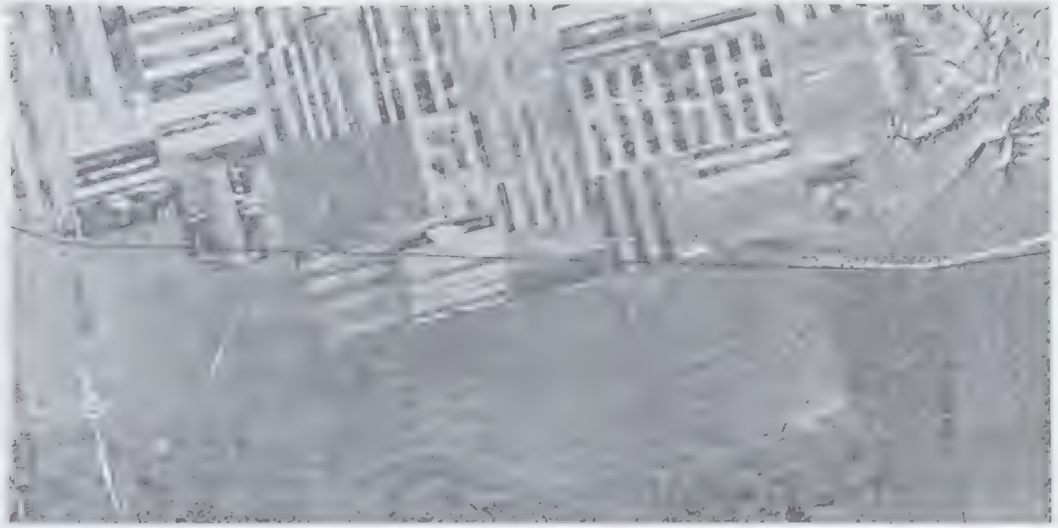


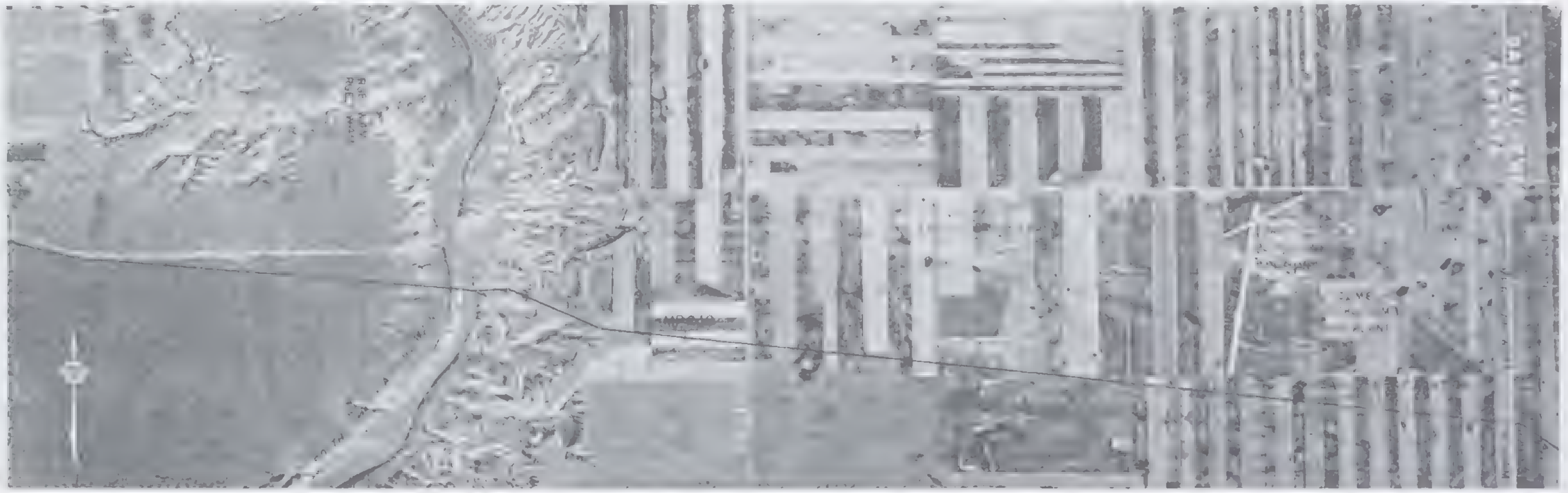
OWNERSHIP

DRILL HOLE DATA

PROFILE







FOOTAGE THIS SHEET

0 0.5

SCALE (miles)

PIPELINE LEGEND

STORAGE OR STAGING AREA

CAMP SITE

BORROW SITE

WHARF

PERMANENT ROAD

TEMPORARY ROAD

CARRIER - 42" OD x 0.610" WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

MISCELLANEOUS MATERIAL

DESCRIPTION

GENERAL NOTES

1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE

MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

ROLL Nº

MAX OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. DOWNSTREAM M.P.

CHKD BY Jan 22/74

SCALE 1 : 2000

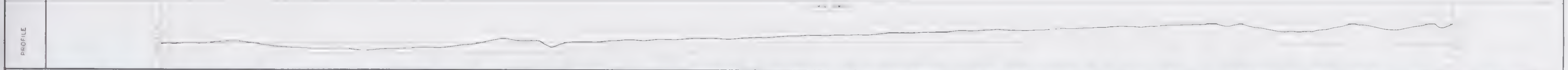
SHEET 18 OF 31

2B-0200-1018

OWNERSHIP

DRILL HOLE DATA

PROFILE



FOOTAGE THIS SHEET

PIPELINE LEGEND

COMPRESSOR STATION
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
BORROW SITE
WHARF
COMMUNICATIONS TOWER
SIDE VALVE

CARRIER - 42" OD x 0.630" W.T. GRADE 70
HEAVYWALL - 42" OD x 0.905" W.T. GRADE 65

COATING DATA

MISCELLANEOUS MATERIAL

REFERENCE DRAWINGS

SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE

MAX. OPERATING PRESSURE 680 psi

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

SASKATCHEWAN

UPSTREAM M.P. 235 DOWNSTREAM M.P. 245

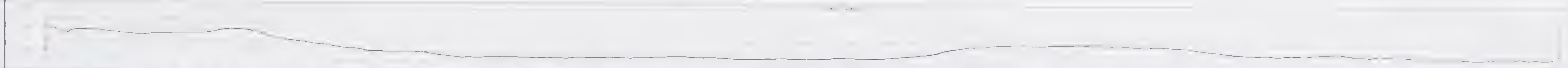
19 31

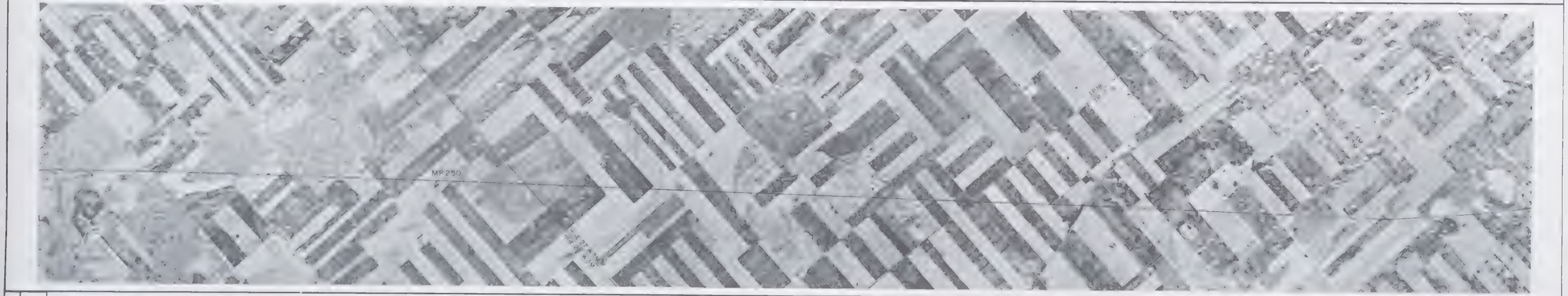
2B-0200-1019

OWNERSHIP

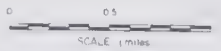
DRILL HOLE DATA

PROFILE





FOOTAGE THIS SHEET



PIPELINE LEGEND

CARRIER 42" O.D. x 0.630" W.T. GRADE 70	
HEAVYWALL 42" O.D. x 0.909" W.T. GRADE 65	

LOADING DATA

DESCRIPTION

MINIMUM DEPTH OF COVER = 2.5 FEET

ROLL Nº
PHOTO Nº

CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE
MAX. OPERATING PRESSURE 60

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

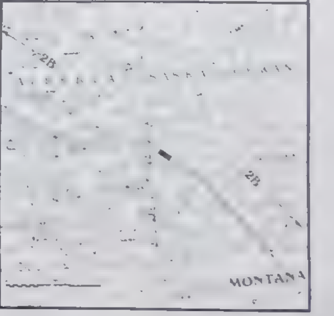
GAS PIPELINE ROUTE ALIGNMENT DATA
SASKATCHEWAN

UPSTREAM M.P. 49
DOWNSTREAM M.P. 50

CHK'D BY
DATE Jan 22/74
APP'D BY
DATE Jan 22/74

SCALE 1" = 2000'
SHEET 20 OF 31

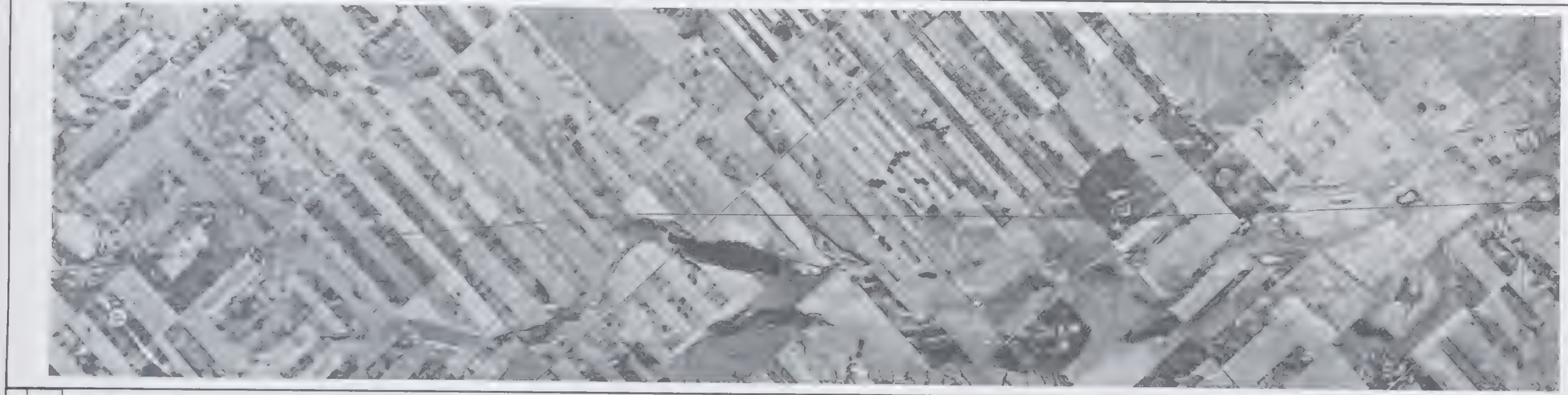
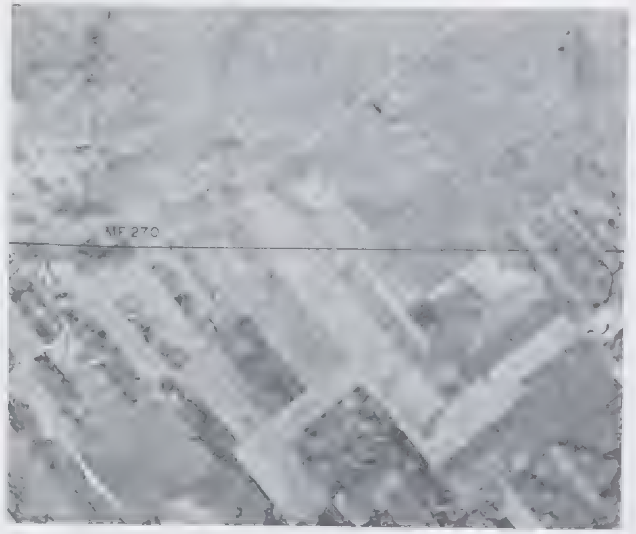
28-0200-1020



OWNERSHIP

DRILL HOLE DATA

PROFILE

MATCH LINE

MATCH LINE

FOOTAGE THIS SHEET

5

SCALE - MILES

PIPELINE LEGEND

POINT OF INTERSECTION

PERMANENT ROAD

TEMPORARY ROAD

HELIPAD

MEASURING STATION

COMMUNICATIONS TOWER

SIDE VALVE

WINTER TRAIL

AIR STRIP

STORAGE OR STAGING AREA

CAMP SITE

STAGING AREA & CAMP SITE

BORROW SITE

WHARF

CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x 0.908" WT GRADE 65	

COATING DATA

QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES:
1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
- B-0 No buoyancy
- B-1 Potential buoyant conditions along segment
- B-2 Potential buoyant conditions along portions of the segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nº
CR73 53	94 - 101
CR73 54	56 - 59

MIN TEST PRESSURE 2100 psi

68 psi

Nº	DATE	REVISION	APPRO BY	APPRO BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

SASKATCHEWAN

UPSTREAM M.P.

DOWNSTREAM M.P.

DRN BY

DATE

CHKD BY

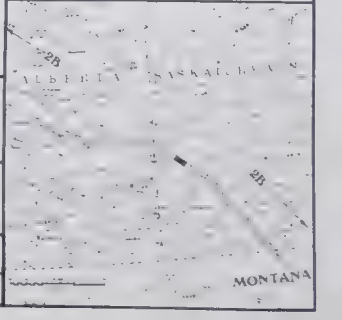
APPD BY

4/74

21

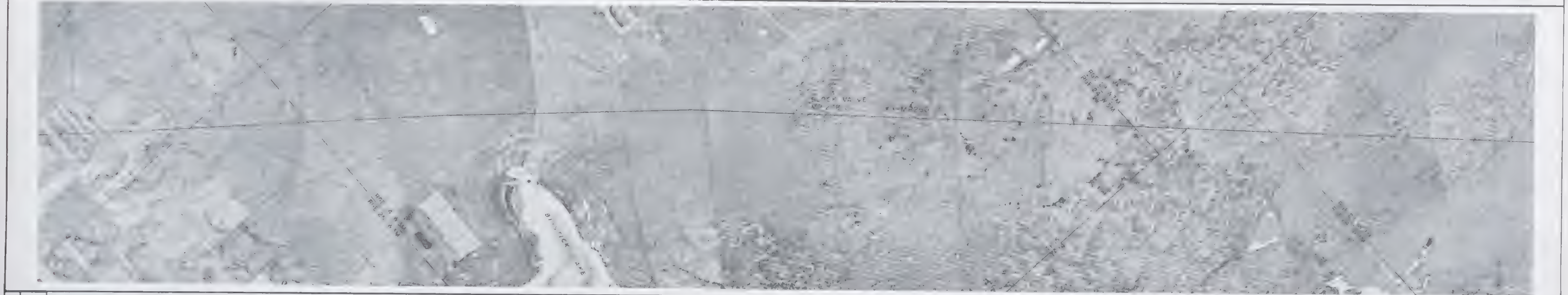
31

2B-0200-1021



DRILL HOLE DATA

PROFILE



CONSTRUCTION DATA

MATCH LINE

MATCH LINE

SCALE - MILES

PIPELINE LEGEND

STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
WHARF

PIPE DATA	
CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE psi

MAX OPERATING PRESSURE 68 psi

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

SASKATCHEWAN

UPSTREAM M.P.

DOWNSTREAM M.P.

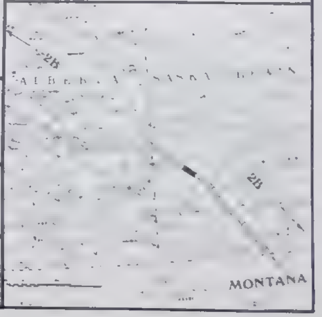
CHKD BY Jan 24/74

APPD BY Jan 24/74

SCALE 1:2000

SHEET 22 OF 31

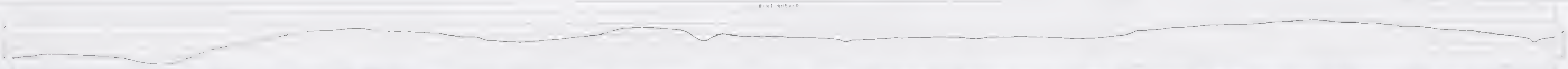
28-0200-1022

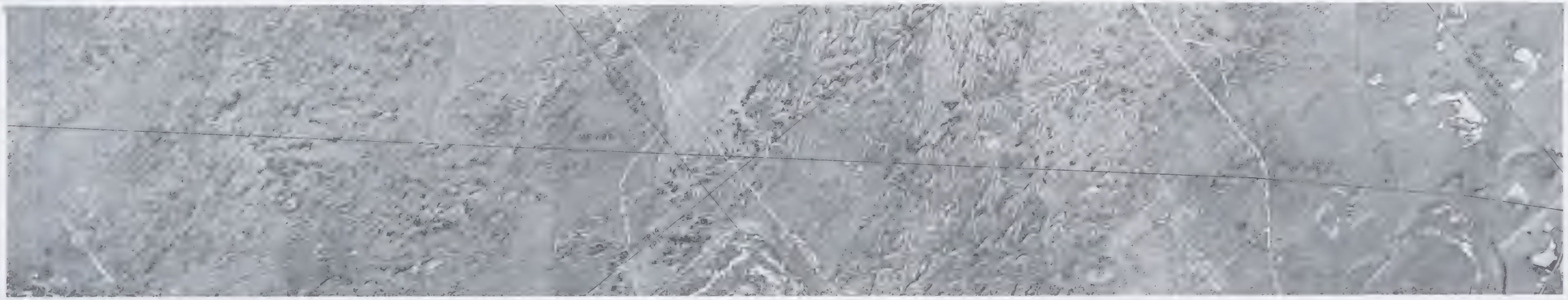


OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

REFERENCE DRAWINGS & NOTES

MATCH LINE 784 98

4 0110 0003

4 01 0 0003
03 0 6000

4 02 0 1000
MATCH LINE 296 15

FOOTAGE THIS SHEET

PIPELINE LEGEND

- ARMOR PIPE
- ARMOR PIPE
- BERM BREAK
- [illegible]
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- TEST LEAD & DIRECTION OF WIRES
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- [illegible]
- DRAINAGE LOCATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD

PIPE DATA	QUAN
CARRIER - 42" OD x 0.630 WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES

& MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

B-0 No buoyancy

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nº
CR72154	3 41

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE

MAX OPERATING PRESSURE 68

Nº	DATE	REVISION	APPR BY	APPR BY

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY, ALBERTA

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

SASKATCHEWAN

UPSTREAM M.P.

DOWNSTREAM M.P.

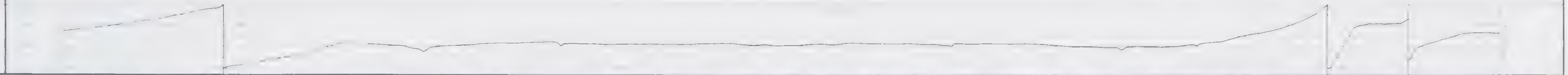
SHEET 23 OF 31

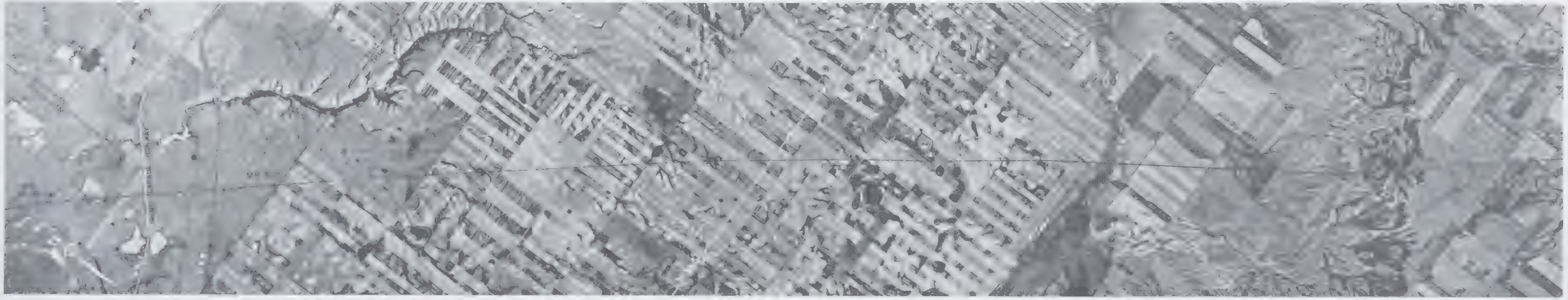
2B-0200-1023

OWNERSHIP

DRILL HOLE DATA

PROFILE

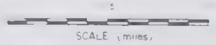




CONSTRUCTION DATA

REFERENCE DRAWINGS & NOTES

FOOTAGE THIS SHEET



PIPELINE LEGEND

- CARRIER PIPE
- POINT OF INTERSECTION
- PERMANENT ROAD
- SWAMP WEIGHT
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- TEST LEAD & DIRECTION OF WIRES
- WHARF

CARRIER · 42" OD x 0.630" W.T. GRADE 70	
HEAVYWALL · 42" OD x 0.900" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
B-0 No buoyancy
B-1 Potential buoyant conditions along segment
B-2 Potential buoyant conditions along portions of the segment

CR73 53 | 02 113

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE 2100 psi
MAX OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

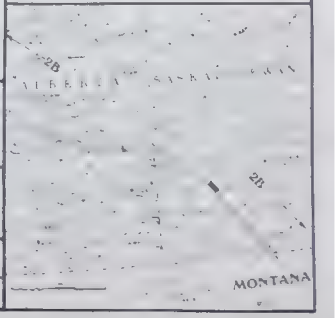
SASKATCHEWAN

UPSTREAM M.P. 195 DOWNSTREAM M.P.

Jan 27/74
APPD BY Jan 28/74

SCALE 1" = 3000
SHEET 24 OF 31

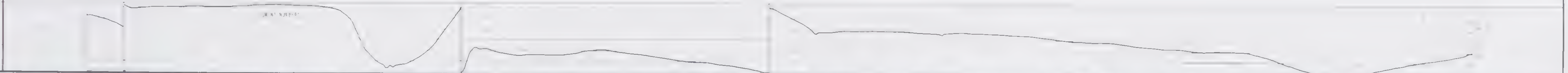
2B-0200-1024

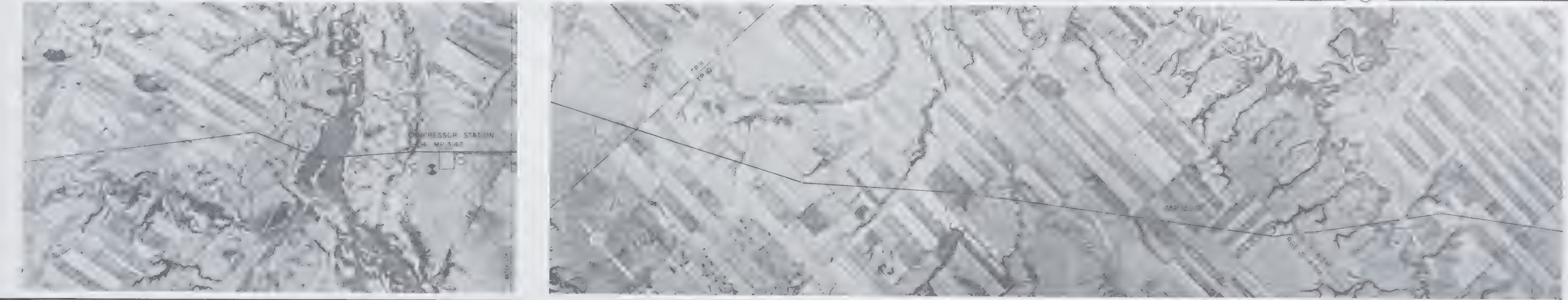


OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

FOOTAGE THIS SHEET

5

PIPELINE LEGEND

WELPAC

[illegible] TOWER

PIPE DATA	
CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

COATING DATA

DESCRIPTION	

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

ROLL Nº	PHOTO Nº
CR73 53	118 115
CR73 54	2

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

68 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

SASKATCHEWAN

UPSTREAM M.P. DOWNSTREAM M.P.

22/74

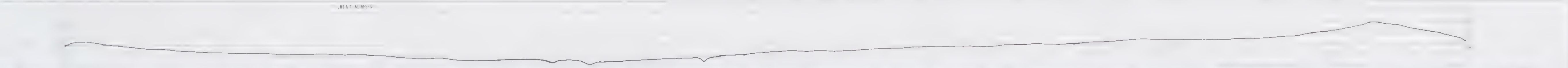
25 31

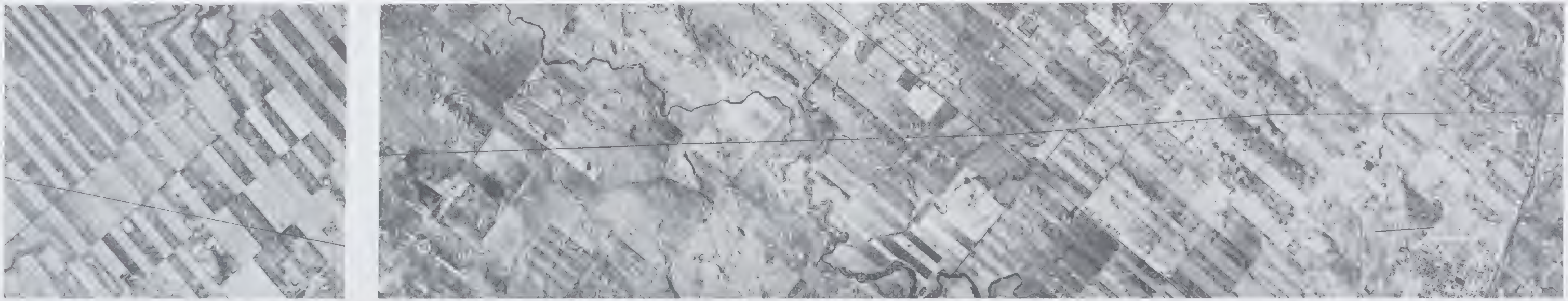
28-0200-1025

OWNERSHIP

DRILL HOLE DATA

PROFILE





ALIGNMENT DATA

FOOTAGE THIS SHEET

05 10
SCALE (miles)

PIPELINE LEGEND

PERMANENT ROAD
TEMPORARY ROAD
COMPRESSOR STATION
STORAGE OR STAGING AREA

PIPE DATA	
CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

	DESCRIPTION	

REFERENCE DRAWINGS

DWG No

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

PERMIT NO

CONSTRUCTION PERMIT NO

2.00 psi

680 psi

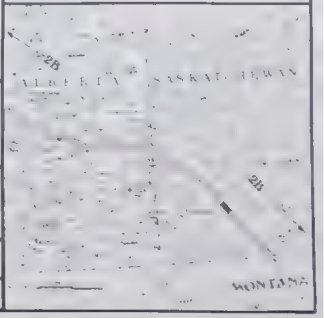
NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
SASKATCHEWAN

UPSTREAM M.P.
DOWNSTREAM M.P.

26 31

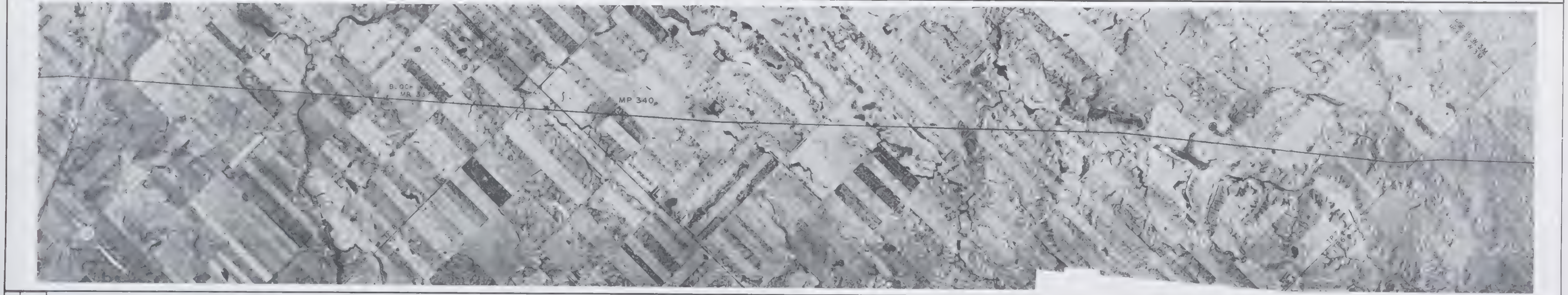
28-0200-1026



OWNERSHIP

DRILL HOLE DATA

PROFILE



CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

- ARMOR ...
- BRIDGE WEIGHT
- SWAMP WEIGHT
- RIVER WEIGHT
- THRUST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- MARKING SIGN
- WEATHER STATION
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- QUARRY
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- MEASURING STATION
- COMMUNICATIONS TOWER
- SIDE VALVE
- WINTER TRAIL

PIPE DATA	
CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

COATING DATA

QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 3.0 FEET

BUOYANCY LEGEND
B-0 No buoyancy
B-1 Potential buoyant conditions along segment
B-2 Potential buoyant conditions along portions of the segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CA73170	15 25 38 54 69 80

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE	2100 psi
MAX OPERATING PRESSURE	1680 psi

Nº	DATE	REVISION	APPRD BY	APPRD BY

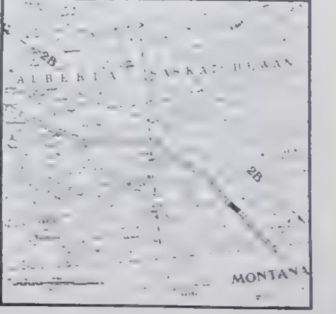
NORTHERN Engineering Services Company Limited

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
SASKATCHEWAN

UPSTREAM M.P. 335
DOWNSTREAM M.P. 341

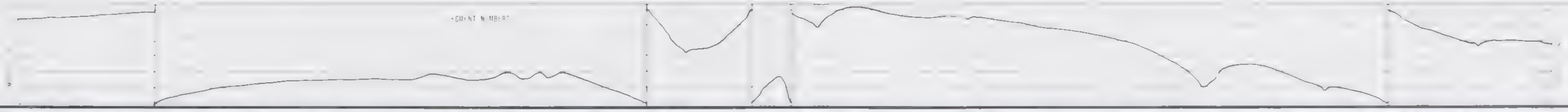
DRN BY
DATE
CHKD BY
Jan 24/74
APPD BY
Jan 28/74
SCALE 1:6000
REV 27 31
28-0200-1027

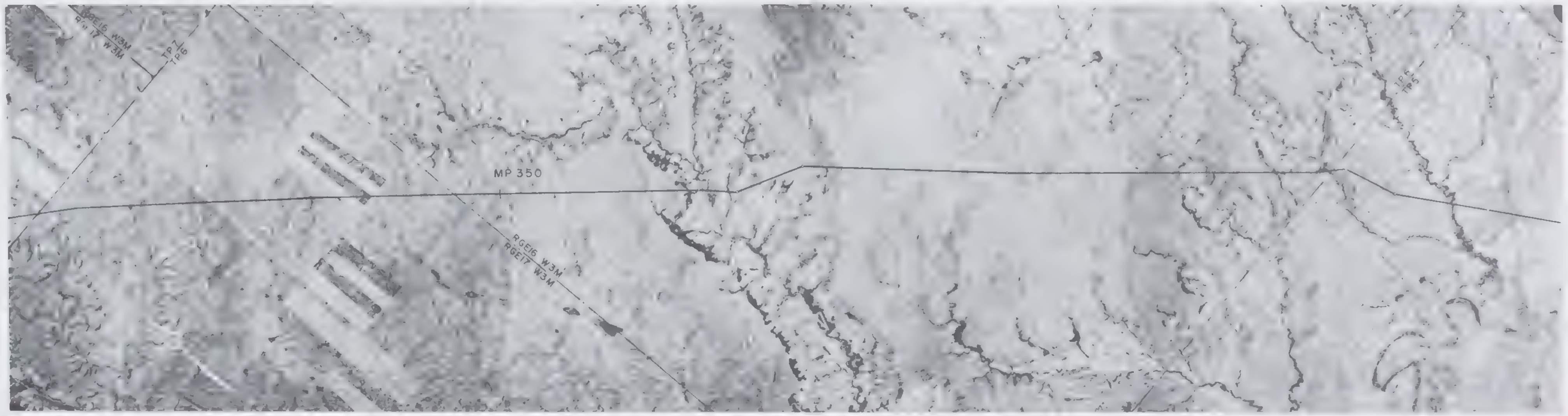


OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

REFERENCE DRAWINGS & NOTES

FOOTAGE THIS SHEET

SCALE miles

PIPELINE LEGEND

POINT OF INTERSECTION
WARNING SIGN
AIR STRIP
STORAGE OR STAGING AREA
CAMP SITE
BORROW SITE
WHARF
PERMANENT ROAD
TEMPORARY ROAD

PIPE DATA	QUAN
CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REF. DWG. Nº

REFERENCE DRAWINGS — DWG. Nº

GENERAL NOTES:
1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET.

BUOYANCY LEGEND
B-0 No buoyancy
B-1 Potential buoyant conditions along segment
B-2 Potential buoyant conditions along portions of segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nº
[illegible]	56 - 61

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº

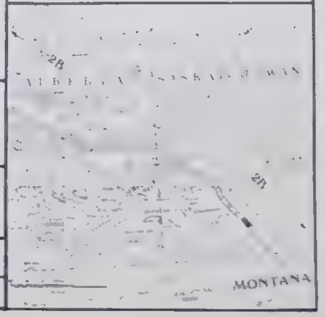
MIN. TEST PRESSURE	2100 psi
MAX. OPERATING PRESSURE	1680 psi

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
SASKATCHEWAN

UPSTREAM M.P.
DOWNSTREAM M.P.

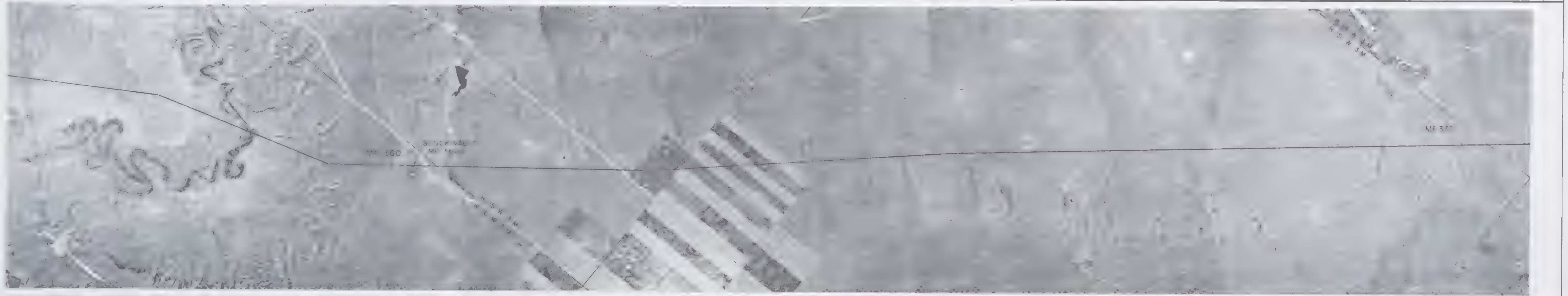
CHKD. BY Jan 22/73
APPD. BY Jan 23/73
SCALE 1" = 2000'
SHEET 28 OF 31
28 0200-1028



OWNERSHIP

DRILL HOLE DATA

PROFILE



REFERENCE DRAWINGS & NOTES

MATCH LINE

FOOTAGE THIS SHEET

CONSTRUCTION DATA

PIPELINE LEGEND

HEAVY WALL PIPE
FROST ANCHOR
SCREW ANCHOR
ANCHOR BLOCK
POINT OF INTERSECTION
COMPRESSOR STATION
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
PERMANENT ROAD
TEMPORARY ROAD
HELIPAD
MEASURING STATION
COMMUNICATIONS TOWER
SIDE VALVE
WINTER TRAIL

PIPE DATA	QUAN
CARRIER - 42" OD x 0.630" W.T. GRADE 70	
HEAVYWALL - 42" OD x 0.905" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	ITEM Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
0-0 No buoyancy

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nº
CA73 52	48 55

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº
MIN TEST PRESSURE 2___ psi
MAX OPERATING PRESSURE 68_ psi

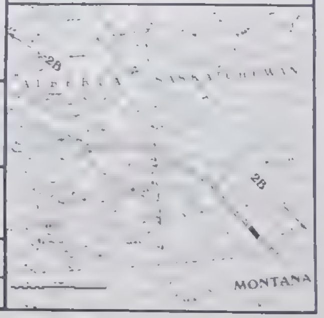
NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DAT'
SASKATCHEWAN

UPSTREAM M.P. 356
DOWNSTREAM M.P. 13

29 · 31

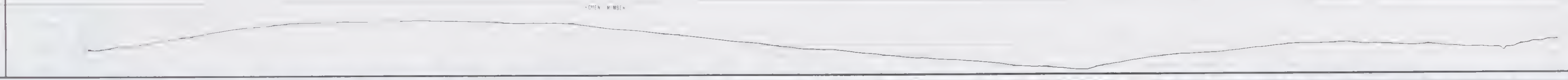
28-0200-1029

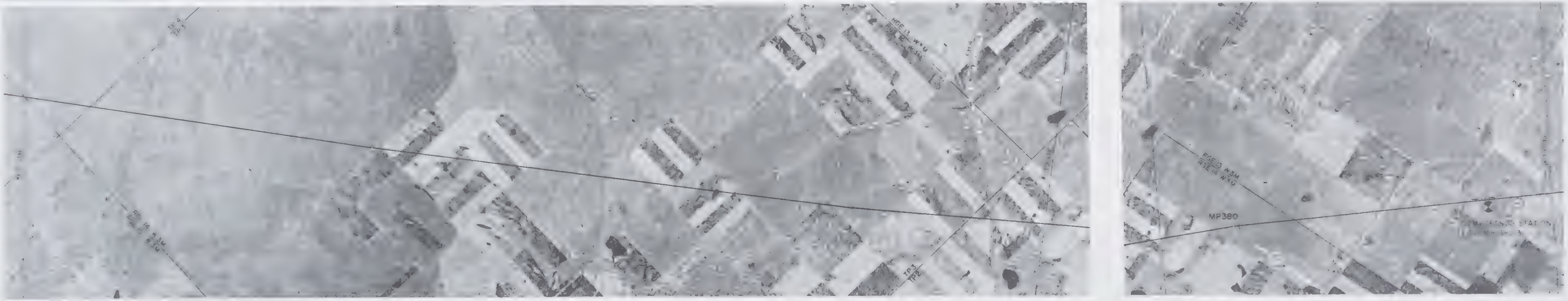


OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

PIPELINE LEGEND

PERMANENT ROAD
TEMPORARY ROAD
HELIPAD
MEASURING STATION
COMMUNICATIONS TOWER
SIDE VALVE
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
BORROW SITE

PIPE		QUAN
ARRER 4	D	GRADE
HEAVYWALL 4		GRADE 65

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY
ROLL Nº

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº

680 0

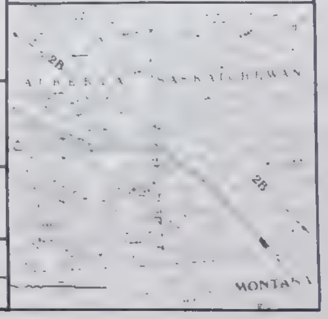
NORTHERN ENGINEERING SERVICES COMPANY LIMITED
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
SASKATCHEWAN

UPSTREAM M.P.
DOWNSTREAM M.P.

30 31

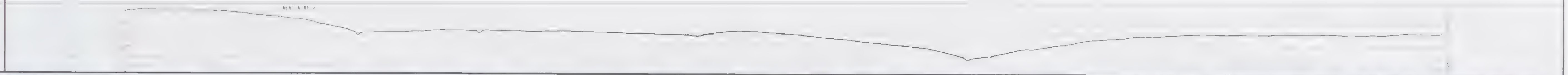
2B-0200-1030

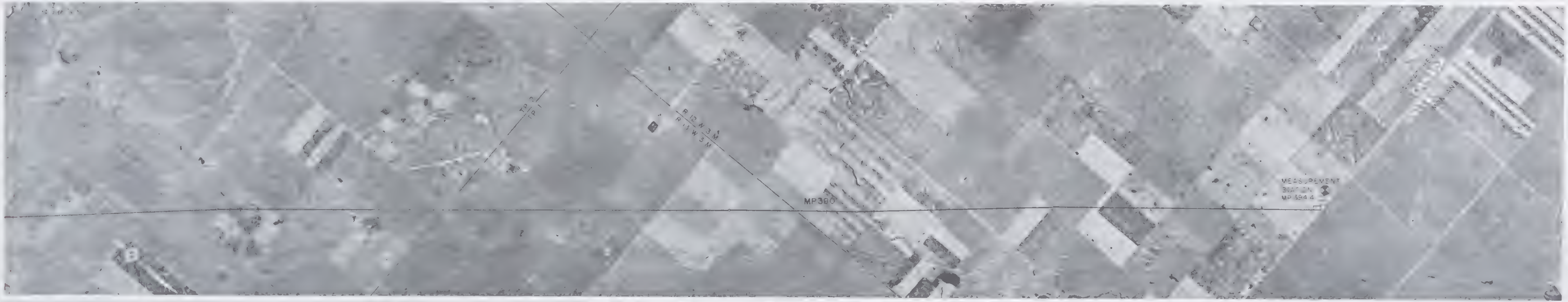


OWNERSHIP

DRILL HOLE DATA

PROFILE





FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

STORAGE OR STAGING AREA

CAMP SITE

STAGING AREA & CAMP SITE

MEASURING STATION

COMMUNICATIONS TOWER

CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x .905" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL		
	DESCRIPTION	

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES

BUOYANCY LEGEND

CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE

MAX. OPERATING PRESSURE

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

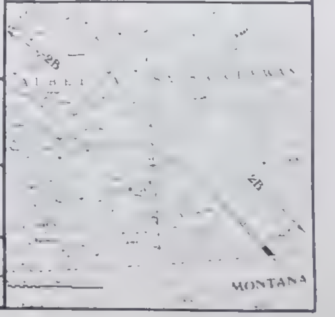
SASKATCHEWAN

UPSTREAM M.P.

DOWNSTREAM M.P.

31 31

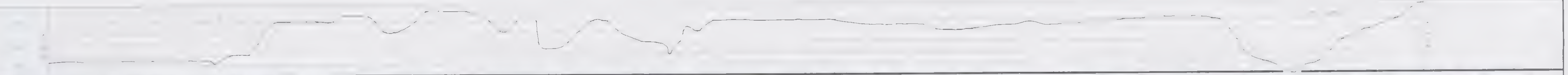
2B-0200-1031

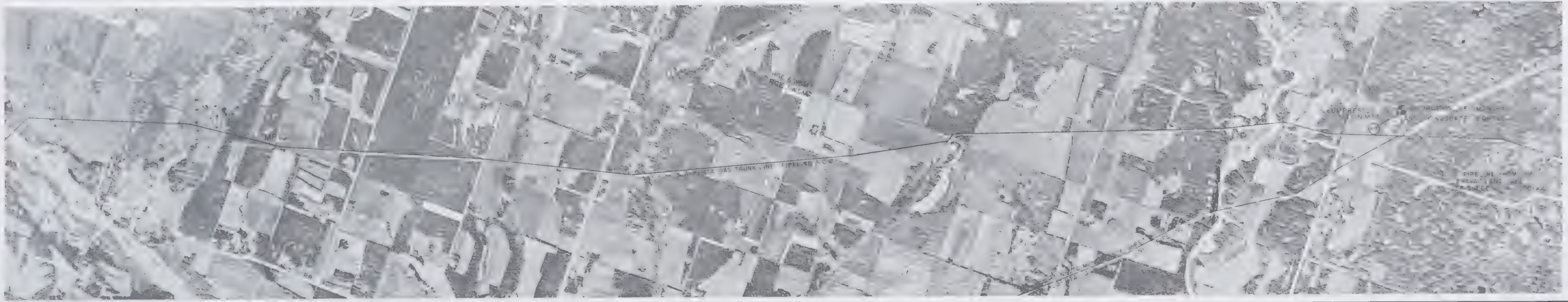


OWNERSHIP

DRILL HOLE DATA

PROFILE



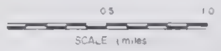


CONSTRUCTION DATA

MATCH LINE

MATCH LINE

FOOTAGE THIS SHEET



PIPELINE LEGEND

PERMANENT ROAD
TEMPORARY ROAD
HELIPAD
MEASURING STATION
COMMUNICATION TOWER
SIDE VALVE
WINTER TRAIL
COMPRESSOR STATION
CAMP SITE
STAGING AREA & CAMP SITE
WHARF

PIPE DATA	
CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
2 MINIMUM DEPTH OF COVER = 2.5 FEET

AERIAL PHOTOGRAPHY	
ROLL Nº	PHOTO Nºs
CR73156	73 84

OPERATING CERTIFICATE Nº
CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE	2100 psi
MAX OPERATING PRESSURE	1680 psi

Nº	DATE	REVISION	APPD BY	APPD BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

UPSTREAM M.P. 0
DOWNSTREAM M.P.

CHKD BY
APPD BY
Jan 23/74

SCALE 1 : 2000
SHEET 1 OF 25

2C-0200-1001

OWNERSHIP

DRILL HOLE DATA

PROFILE

CONSTRUCTION DATA

FOOTAGE THIS SHEET

PIPELINE LEGEND

- BERM BREAK
- SWAMP WEIGHT
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- ANCHOR BLOCK
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- MILEPOST SIGN AIRCRAFT
- MILEAGE EQUATION
- COMPRESSOR STATION
- AIR STRIP
- STAGING AREA & CAMP SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD

PIPE DATA	QUAN
CARRIER - 42" O.D. x 0.630" W.T. GRADE 70	
HEAVYWALL - 42" O.D. x 0.805" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY	
ROLL Nº	PHOTO Nºs
CR73156	59 72

OPERATING LICENCE Nº

68

Nº	DATE	REVISION	APPD. BY	APPD. BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

UPSTREAM M.P. DOWNSTREAM M.P.

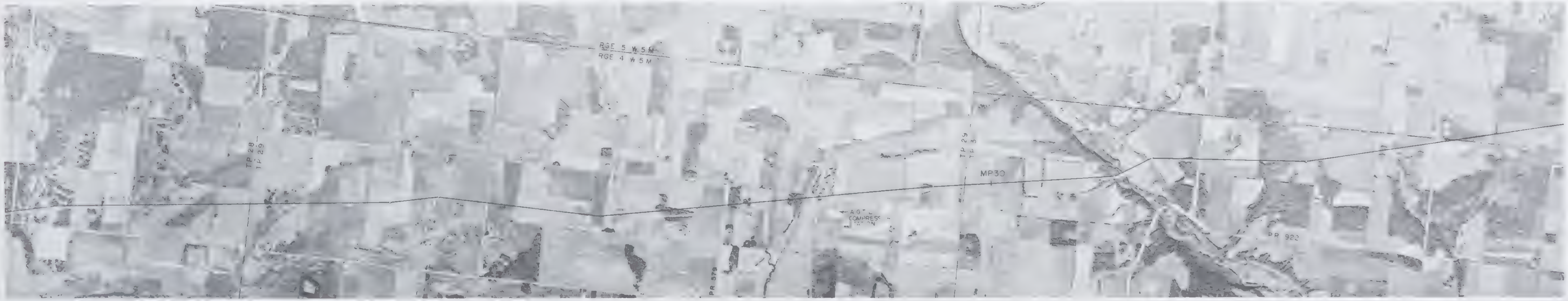
2 25

2C-0200-1002

OWNERSHIP

DRILL HOLE DATA

PROFILE



CONSTRUCTION DATA

MATCH LINE MP 29.18

5

SCALE (miles)

PIPELINE LEGEND

POINT OF INTERSECTION
DRILL HOLE LOCATION
COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
BORROW SITE
QUARRY
BLOCK VALVE
TEST LEAD & DIRECTION
PERMANENT ROAD
TEMPORARY ROAD

PIPE DATA	QUAN
CARRIER 48" [illegible] W.T. GRADE 70	
HEAVYWALL 42" OD x 0.900" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

REFERENCE DRAWINGS

DWG Nº

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
B-0 No buoyancy
B-1 Potential buoyant conditions along segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nº
CR73156	48-58

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº
MIN TEST PRESSURE 2100 psi
680 psi

Nº	DATE	REVISION	APPR. BY	APPR. BY

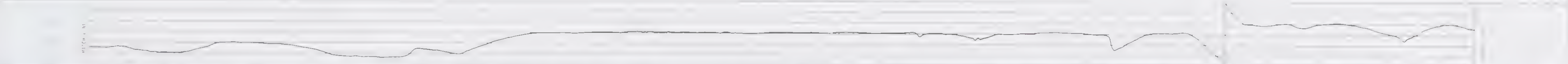
NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

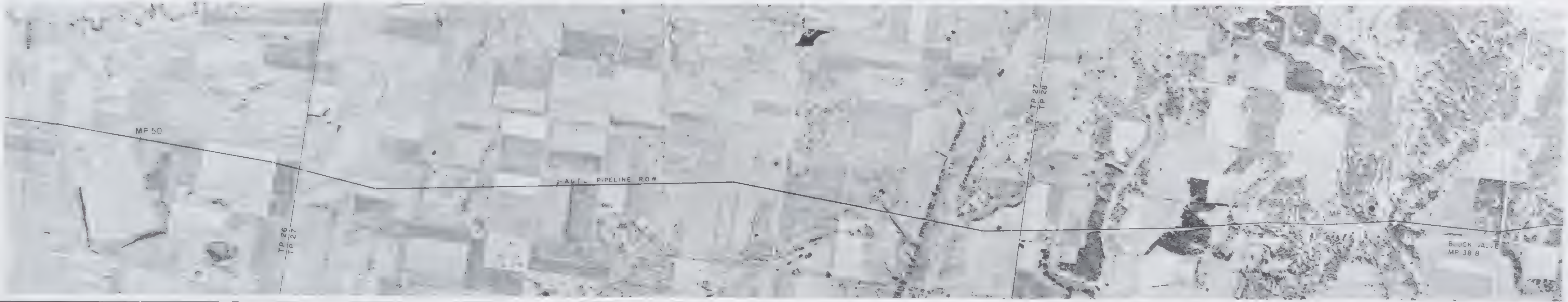
GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

UPSTREAM M.P. 26
DOWNSTREAM M.P.

SCALE 1" = 2000'
SHEET 3 OF 25
2C-0200-1003

DRILL HOLE DATA





FOOTAGE THIS SHEET

PIPELINE LEGEND

PERMANENT ROAD
TEMPORARY ROAD
SCREW ANCHOR
AIR STRIP
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
BORROW SITE

CARRIER - 42" OD x 0.630" WT GRADE 70
HEAVYWALL - 42" OD x 0.905" WT GRADE 65

COATING DATA

REFERENCE DRAWINGS

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

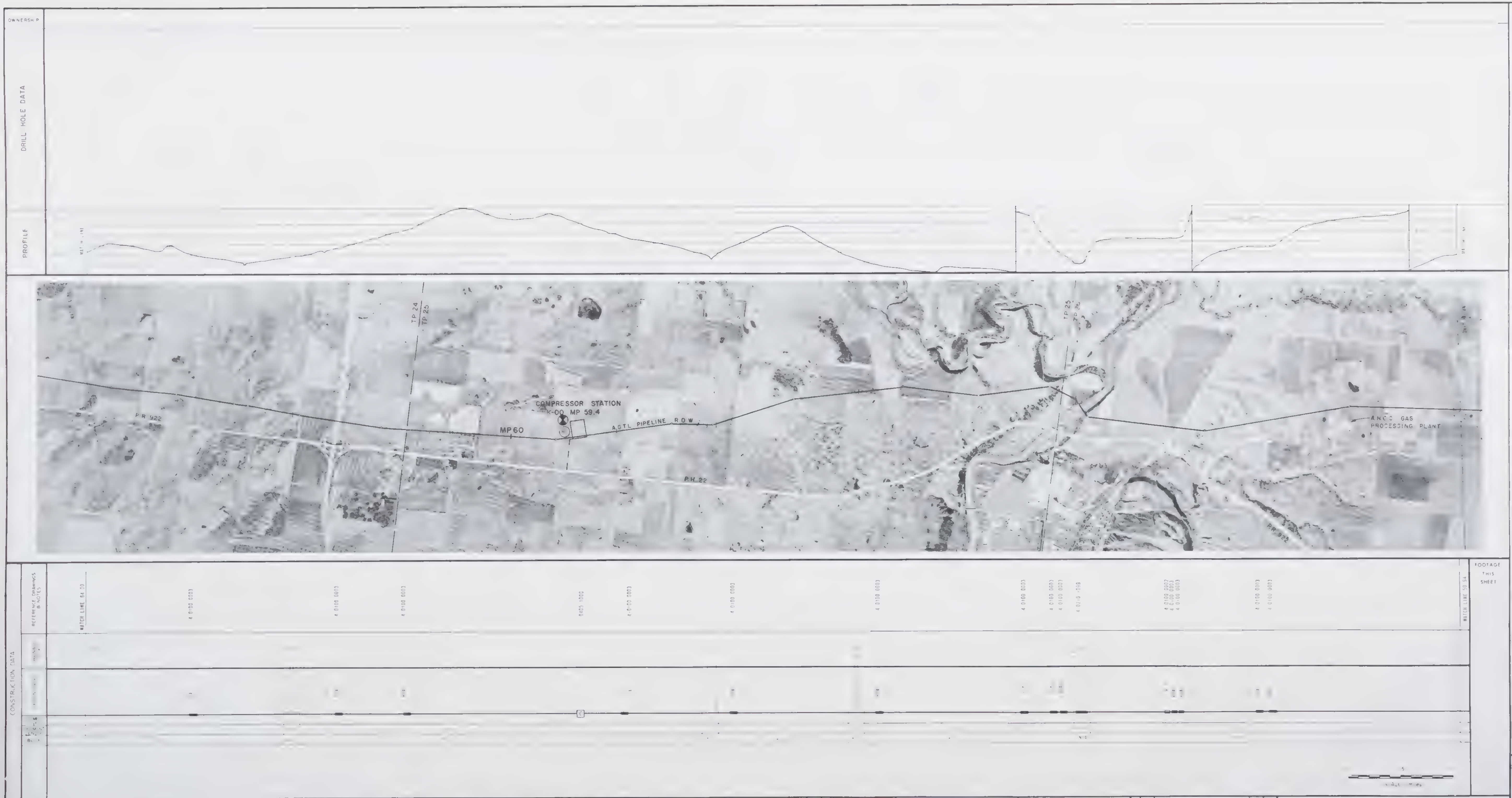
OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº
MIN. TEST PRESSURE 2100 psi
MAX. OPERATING PRESSURE 1680 psi

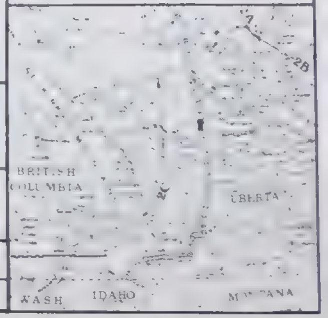
NORTHERN ENGINEERING SERVICES COMPANY LIMITED
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

UPSTREAM M.P.
DOWNSTREAM M.P.

4 25
2C-0200-1004





PIPELINE LEGEND

		○	POINT OF INTERSECTION		PERMANENT ROAD
					TEMPORARY ROAD
▼	BERM BREAK		WARNING SIGN		HELIPAD
					MEASURING STATION
	RIVER WEIGHT	★			COMMUNICATIONS TOWER
	FROST ANCHOR		COMPRESSOR STATION		SIDE VALVE
	SCREW ANCHOR		AIR STRIP		WINTER TRAIL
	HEAVY WALL PIPE	△	STORAGE OR STAGING AREA		
		▲	CAMP SITE		
	ANCHOR BLOCK		STAGING AREA & CAMP SITE		
	BLOCK VALVE		BORROW SITE		
	TEST LEAD & DIRECTION OF WIRES	■	WHARF		

PIPE DATA	
CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	
COATING DATA	

MISC. AND ... MATERIAL

...	DESCRIPTION	BEGIN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
B-0 No buoyancy
B-1 Potential buoyant conditions along segment
B-2 Potential buoyant conditions along portions of the segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CR73156	23 35

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE	2100 psi
MAX OPERATING PRESSURE	1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

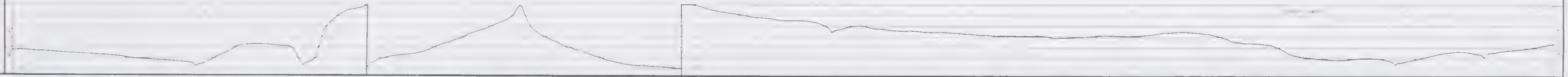
UPSTREAM M.P.
DOWNSTREAM M.P.

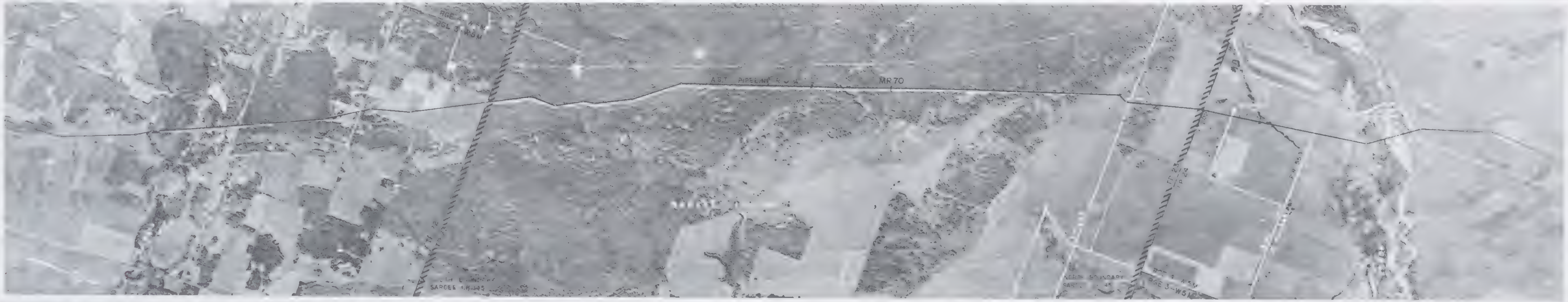
CHKD BY
APPD BY
SCALE 1 : 2000
SHEET 5 OF 25
2C-0200-1005

OWNERSHIP

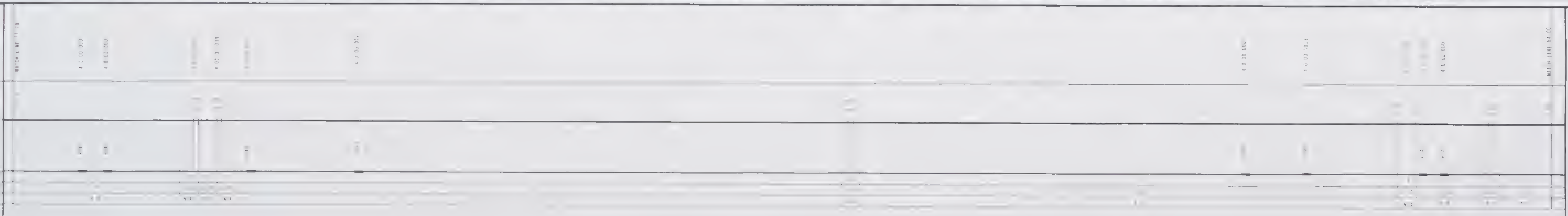
DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA



FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- COMPRESSOR STATION
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD

CARRIER - 42" O.D. x 0.630" W.T. GRADE 70	
HEAVYWALL - 42" O.D. x 0.905" W.T. GRADE 65	

QUAN	DESCRIPTION	REQN Nº

GENERAL NOTES

1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

B 0 No buoyancy

B 1 Potential buoyant conditions

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CA73156	13-22

CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE	2100 psi
	680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P. 64

DOWNSTREAM M.P.

DR. BY

DATE

CHKD. BY

APPROVED

SHT 6 OF 25

2C-0200-1006

OWNERSHIP

DRILL HOLE DATA

PROFILE

CONSTRUCTION DATA

PIPELINE LEGEND

STORAGE OR STAGING AREA

STAGING AREA & CAMP SITE

PIPE DATA	
CARRIER - 42" O.D. x 0.630" W.T. GRADE 70	
HEAVYWALL - 42" O.D. x 0.905" W.T. GRADE 65	

GENERAL NOTES
STATEMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE
MINIMUM DEPTH OF COVER = 2.5 FEET

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº
MIN. TEST PRESSURE 2100 psi
MAX. OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

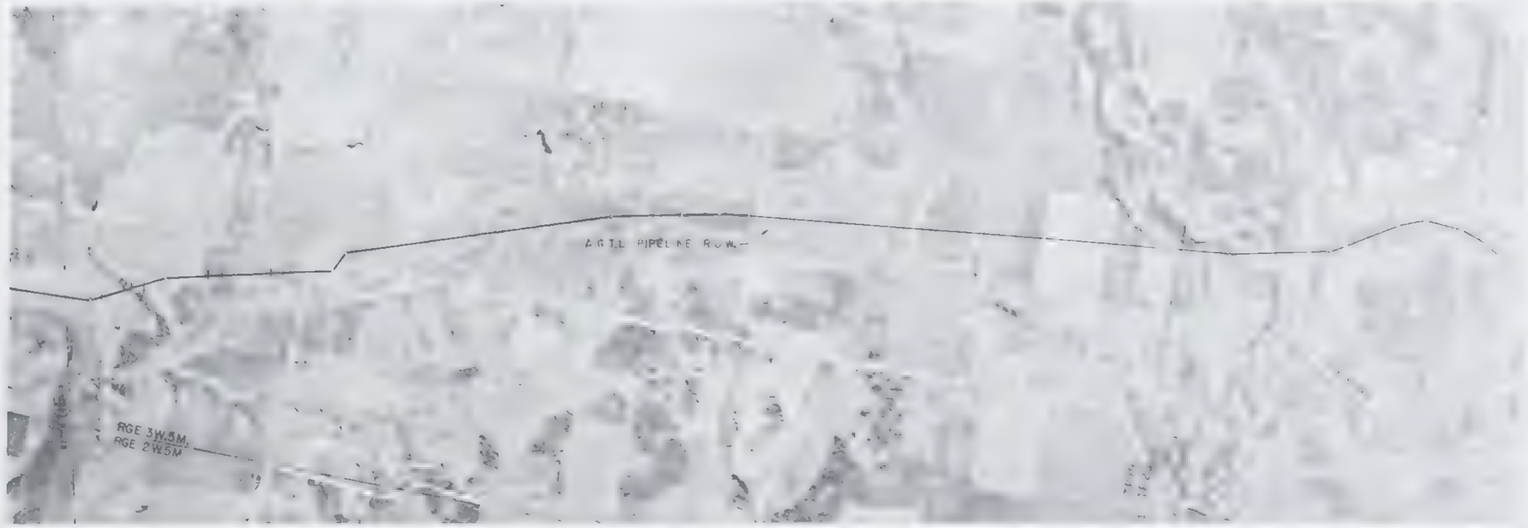
UPSTREAM M.P.
DOWNSTREAM M.P.

DATE 7 · 25

2C-0200-1007

OWNERSHIP

DRILL HOLE DATA



CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE (miles

PIPELINE LEGEND

- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF

PIPE DATA	QUAN
CARRIER - 42" O.D. x 0.630" W.T. GRADE 70	
HEAVYWALL - 42" O.D. x 0.905" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 3.0 FEET

BUOYANCY LEGEND
B-0 No buoyancy

AERIAL PHOTOGRAPHY

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE

MAX OPERATING PRESSURE 68

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

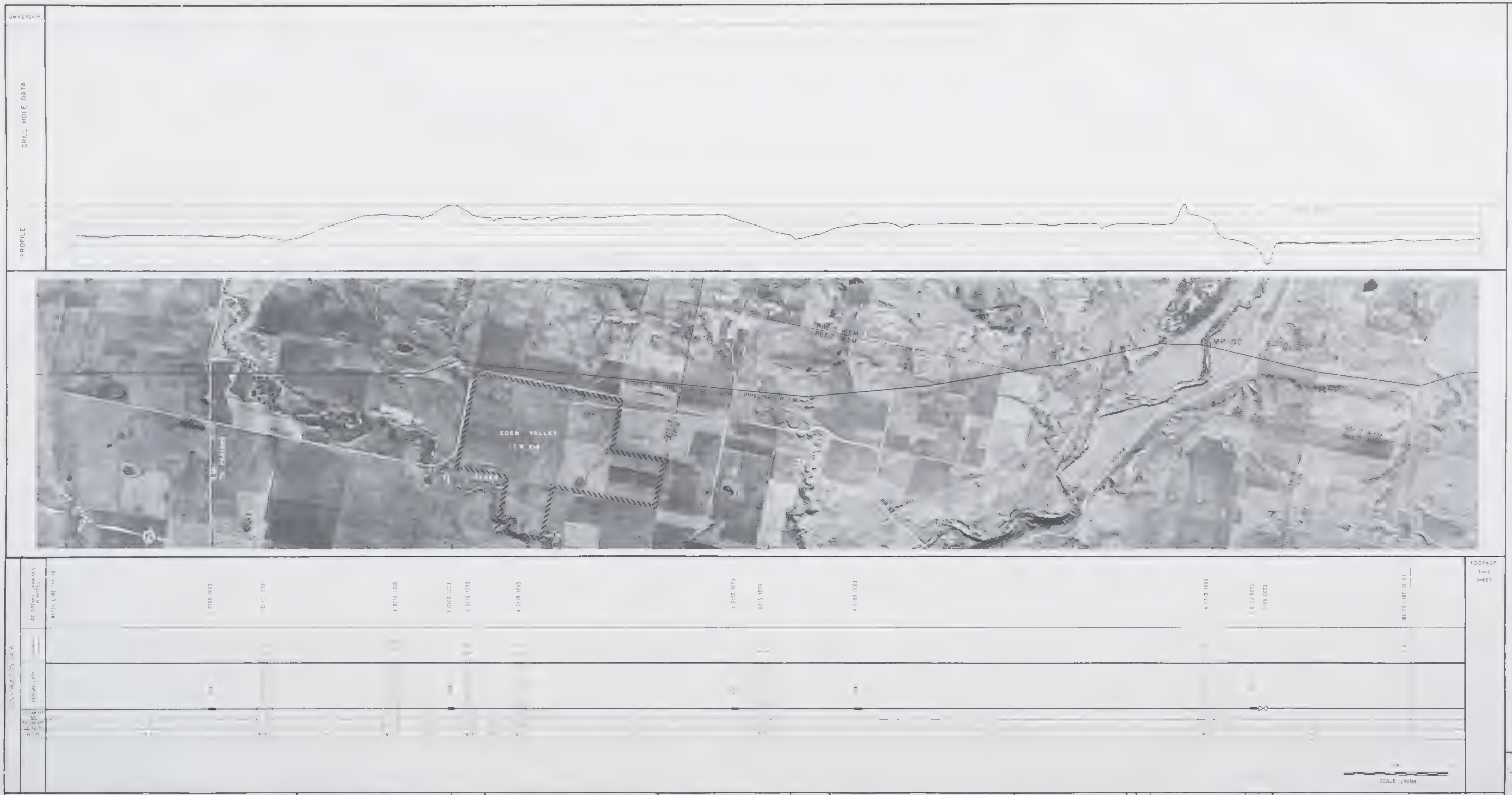
ALBERTA

UPSTREAM M.P. 91

DOWNSTREAM M.P. 98

8 25

2C-0200-1008



PIPELINE LEGEND

- JUMPER PIPE
- JUMPER PIPE
- BERM BREAK
- SWAMP WEIGHT
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- TEST LEAD
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- MEASURING STATION
- COMMUNICATIONS TOWER
- SIDE VALVE
- WINTER TRAIL

PIPE DATA	
CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x .905" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES:
1 SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2 MINIMUM DEPTH OF COVER - 2.5 FEET

BUOYANCY LEGEND
B 0 No buoyancy
B 1 Potential buoyant conditions along segment

AERIAL PHOTOGRAPHY	
CRT 3 55	1 11
CRT 3 54	201 204

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº
MIN TEST PRESSURE 2100 psi
680 psi

Nº	DATE	REVISION	APPD BY	APPD BY

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

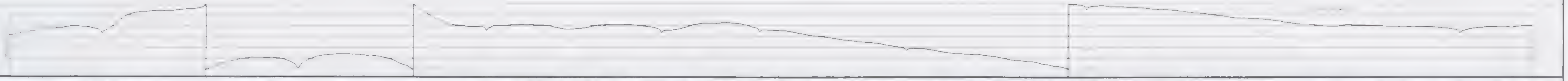
GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

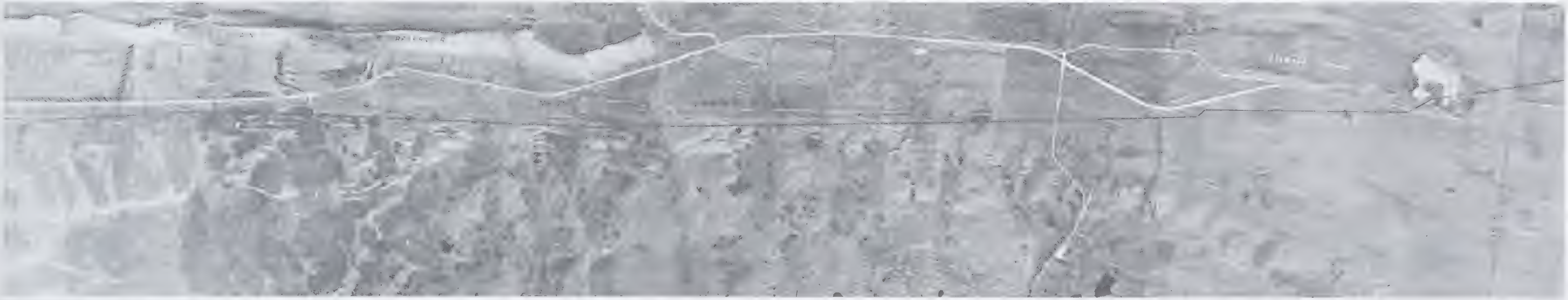
UPSTREAM M.P. 93
DOWNSTREAM M.P.

DRN BY
DATE
SHT 9 OF 25
2C-0200-1009

OWNERSHIP

DRILL HOLE DATA





FOOTAGE THIS SHEET

PIPELINE LEGEND

COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
WHARF
HELIPAD
MEASURING STATION

CARRIER - 42" O.D. x 0.630" W.T. GRADE 70	
HEAVYWALL - 42" O.D. x 0.905" W.T. GRADE 65	

REFERENCE DRAWINGS

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

AERIAL PHOTOGRAPHY

ROLL Nº

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE

MAX. OPERATING PRESSURE 68 ps

Nº DATE REVISION APP'D BY APP'D BY

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY, ALBERTA

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.

DOWNSTREAM M.P.

CHKD BY

APPD BY

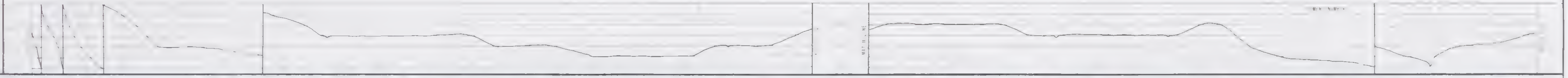
10 25

2C-0200-0.0

OWNERSHIP

DRILL HOLE DATA

PROFILE



CONSTRUCTION DATA

REFERENCE DRAWINGS

DESIGN DATA

FOOTAGE THIS SHEET

0.5

SCALE, miles

PIPELINE LEGEND

PERMANENT ROAD

STORAGE OR STAGING AREA

CAMP SITE

STAGING AREA & CAMP SITE

COMPRESSOR STATION

AIR STRIP

WHARF

PIPE DATA

HEAVYWALL

REFERENCE DRAWINGS

DWG Nº

GENERAL NOTES

SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE

DEPTH OF COVER

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

ROLL Nº | PHOTO Nº

OPERATING LICENSE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE 2100 psi

MAX OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

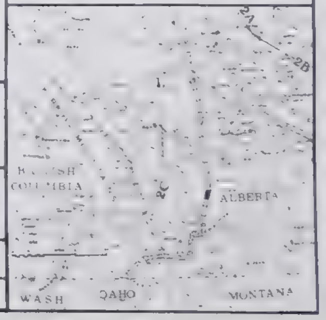
UPSTREAM M.P.

DOWNSTREAM M.P.

APPD BY

REF 11 · 25

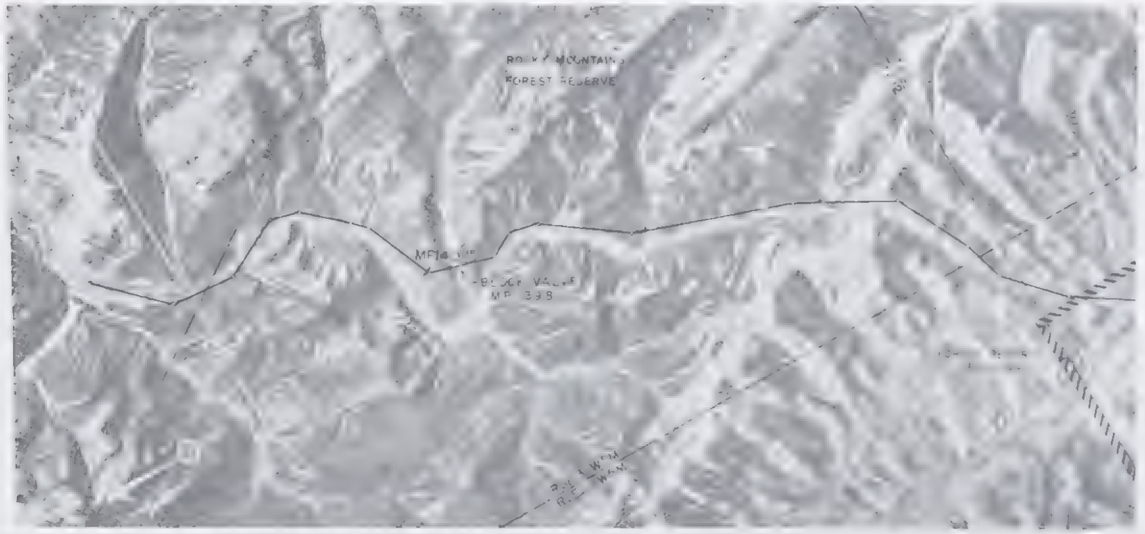
2C-0200-1011



OWNERSHIP

DRILL HOLE DATA

PROFILE



SHEET

PIPELINE LEGEND

COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
STAGING AREA & CAMP SITE
BORROW SITE
WHARF
RAILROAD
MEASURING STATION
COMMUNICATIONS TOWER
SIDE VALVE
WINTER TRAIL

CARRIER 42" OD x 0.630" WT GRADE 70
HEAVYWALL - 42" OD x 0.905" WT GRADE 65

COATING DATA

DESCRIPTION

REFERENCE DRAWINGS

W.O. No.

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº
MIN. TEST PRESSURE 2100 psi
MAX. OPERATING PRESSURE 680 psi

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

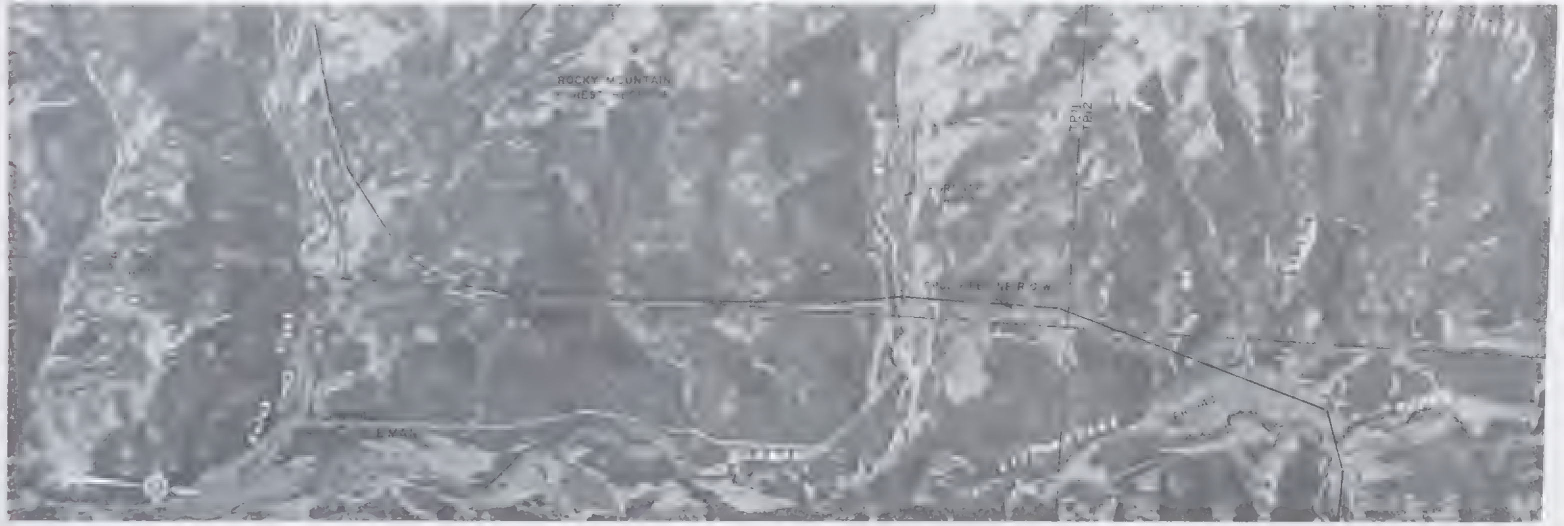
UPSTREAM M.P. DOWNSTREAM M.P. 1

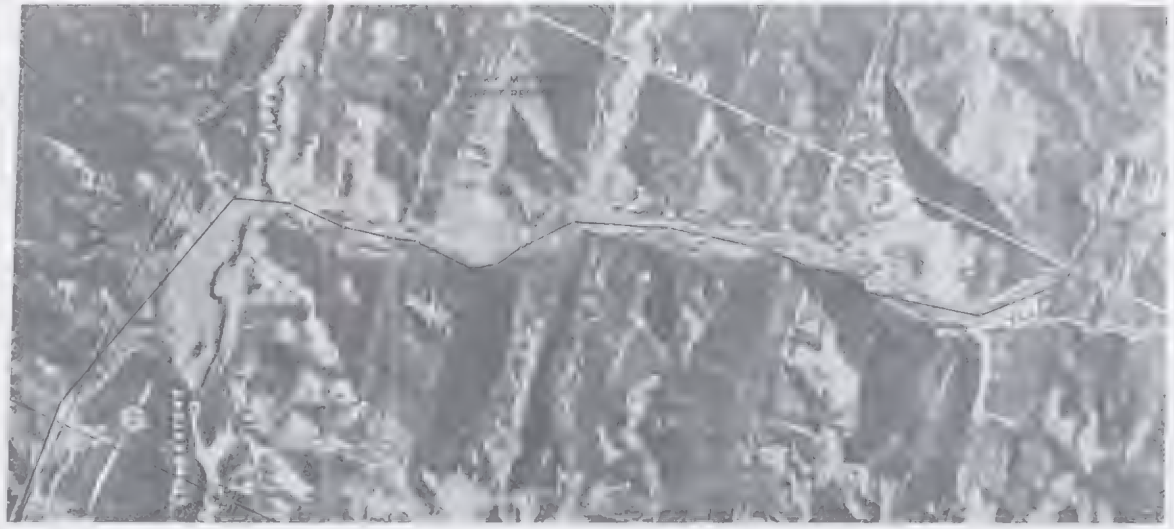
CHKD BY
Jan 24/74
12 25
2C-0200-1012

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

POINT OF INTERSECTION		PERMANENT ROAD
DRILL HOLE LOCATION		TEMPORARY ROAD
STORAGE OR STAGING AREA		
CAMP SITE		
STAGING AREA & CAMP SITE		

PIPE DATA	QUAN
HEAVYWALL - 42" OD x 0.905" W.T. GRADE 65	

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	DRAWING Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nº
YC7127	41 - 43

CONSTRUCTION PERMIT Nº

MAX. OPERATING PRESSURE 1680 p.s.i.

Nº	DATE	REVISION	APPD BY	APPD BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.
DOWNSTREAM M.P.

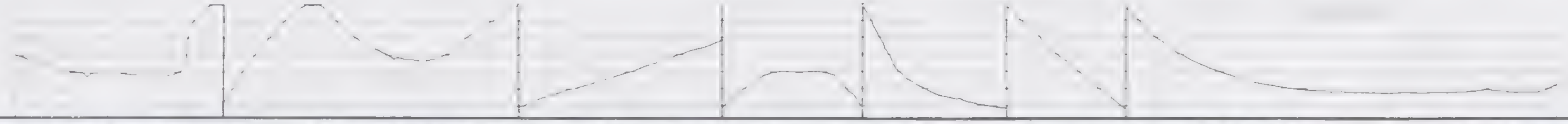
13 · 25

2C · 0200 · 1013

OWNERSHIP

DRILL HOLE DATA

PROFILE



FOOTAGE THIS SHEET

SEGMENT LENGTH

BUOY

SCALE (miles)

PIPELINE LEGEND

COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
BORROW SITE
WHARF

COATING DATA

MISCELLANEOUS MATERIAL

DESCRIPTION

REFERENCE DRAWINGS

GENERAL NOTES
1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
1. NO BUOYANCY

AERIAL PHOTOGRAPHY

ROLL Nº
PHOTO Nºs

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE 2[illegible] psi
MAX. OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED

ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

ALBERTA

UPSTREAM M.P.
DOWNSTREAM M.P.

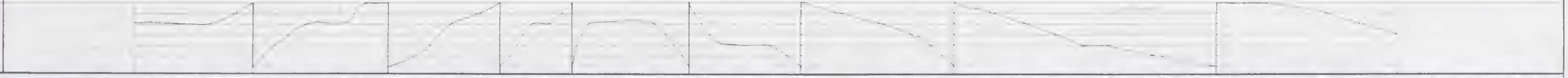
4 25

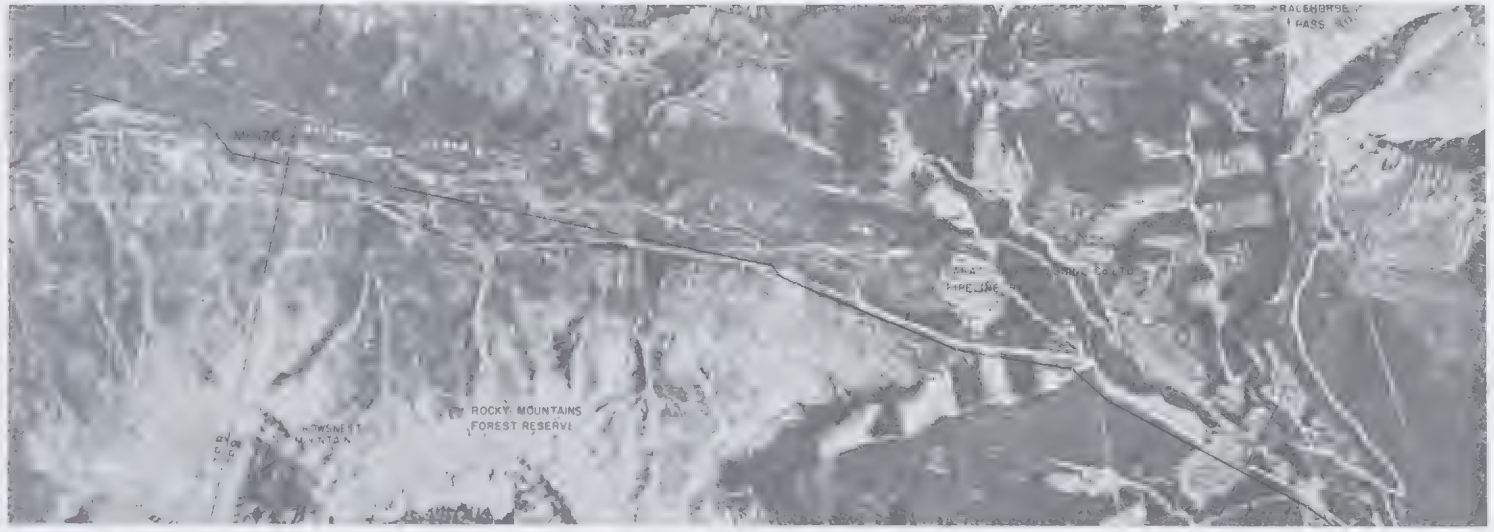
2C-0200-1014

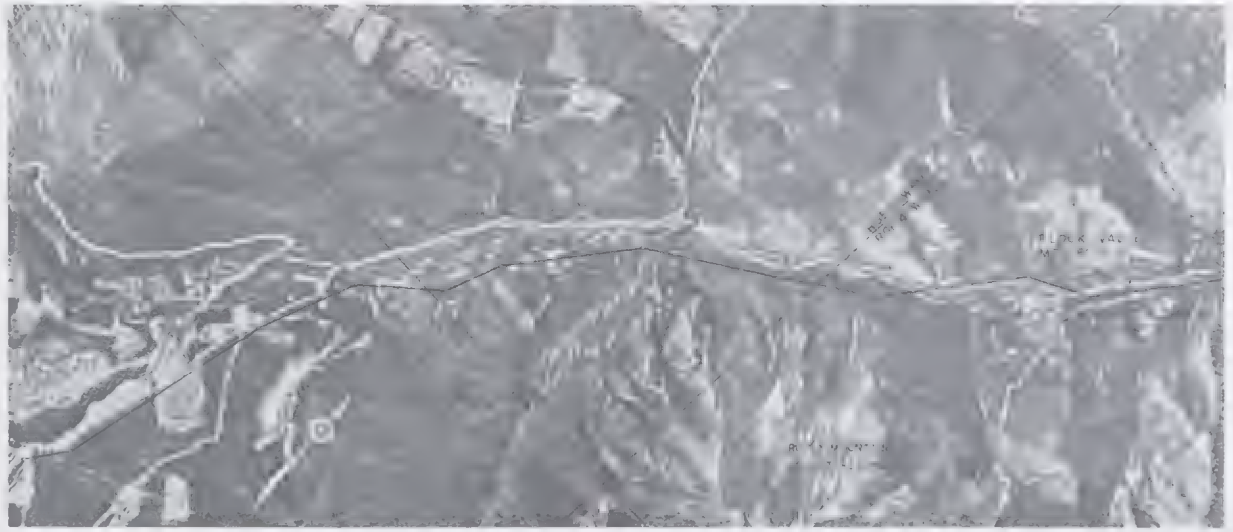
OWNERSHIP

DRILL HOLE DATA

PROFILE







CONSTRUCTION DATA

REFERENCE DRAWINGS & NOTES

DESIGN DATA

SCALE (miles)

SHEET

PIPELINE LEGEND

- [illegible]
- [illegible]
- BERM BREAK
- [illegible] WEIGHT
- [illegible]
- [illegible]
- [illegible]
- HEAVY WALL PIPE
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- MILEPOST SIGN AIRCRAFT
- [illegible]
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- MEASURING STATION
- [illegible]
- [illegible]
- WINTER TRAIL

PIPE DATA	QUAN
CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

COATING DATA

QUAN	DESCRIPTION	REQN Nº

MISCELLANEOUS MATERIAL

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES:
1 SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
B.0 No buoyancy

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
YC 2421	77 - 82

OPERATING [illegible]
CONSTRUCTION PERMIT Nº
MIN TEST PRESSURE 2100 psi
MAX OPERATING PRESSURE 1680 psi

Nº	DATE	REVISION	APPRO BY	APPRO BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY, ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

UPSTREAM M.P. 60
DOWNSTREAM M.P.

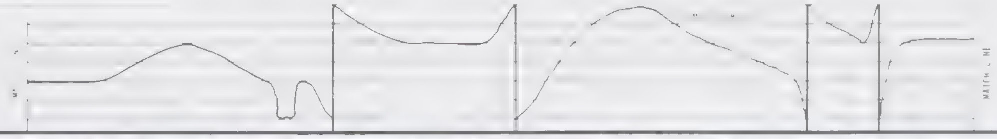
DRN BY
DATE
CHKD BY
APPRD BY

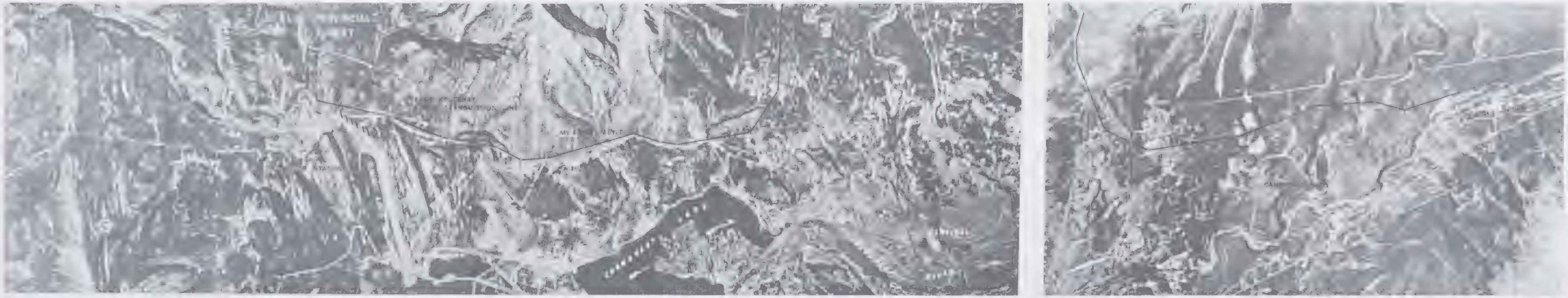
SHEET 15 of 25
2C-0200-1015

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

MATCH LINE

MATCH LINE

FOOTAGE THIS SHEET

SCALE miles

PIPELINE LEGEND

COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
BORROW SITE
WHARF
PERMANENT ROAD
TEMPORARY ROAD
HELIPAD
WEATHER STATION
COMMUNICATIONS TOWER
SIDE VALVE
WINTER TRAIL

PIPE DATA	QUAN
CARRIER 42" OD x 0.630" W.T. GRADE 70	
HEAVYWALL - 42" OD x 0.905" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL		
QUAN	DESCRIPTION	

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE

BUOYANCY LEGEND
B-0 No buoyancy
B-1 Potential buoyant conditions along segment

AERIAL PHOTOGRAPHY

OPERATING LICENCE Nº	
CONSTRUCTION PERMIT Nº	
DESIGN PRESSURE	
MIN TEST PRESSURE	psi
MAX OPERATING PRESSURE	1680 psi

Nº	DATE	REVISION	APP'D BY	APP'D BY

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
ALBERTA

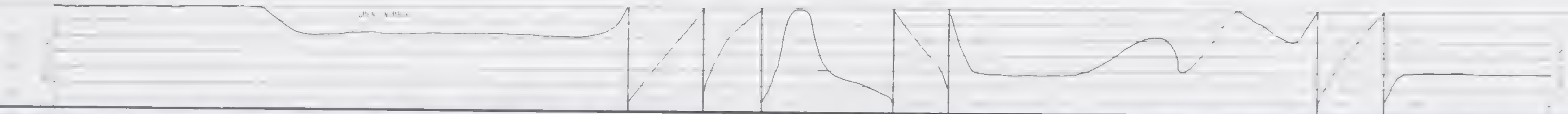
UPSTREAM M.P. 71
DOWNSTREAM M.P.

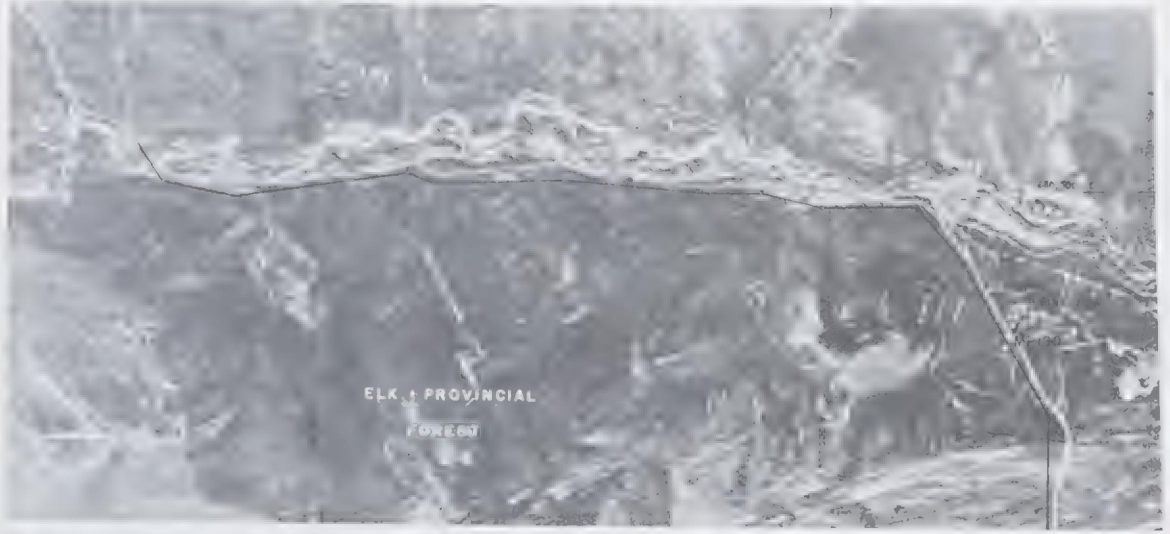
SHEET 16 OF 25
2C-0200-1016

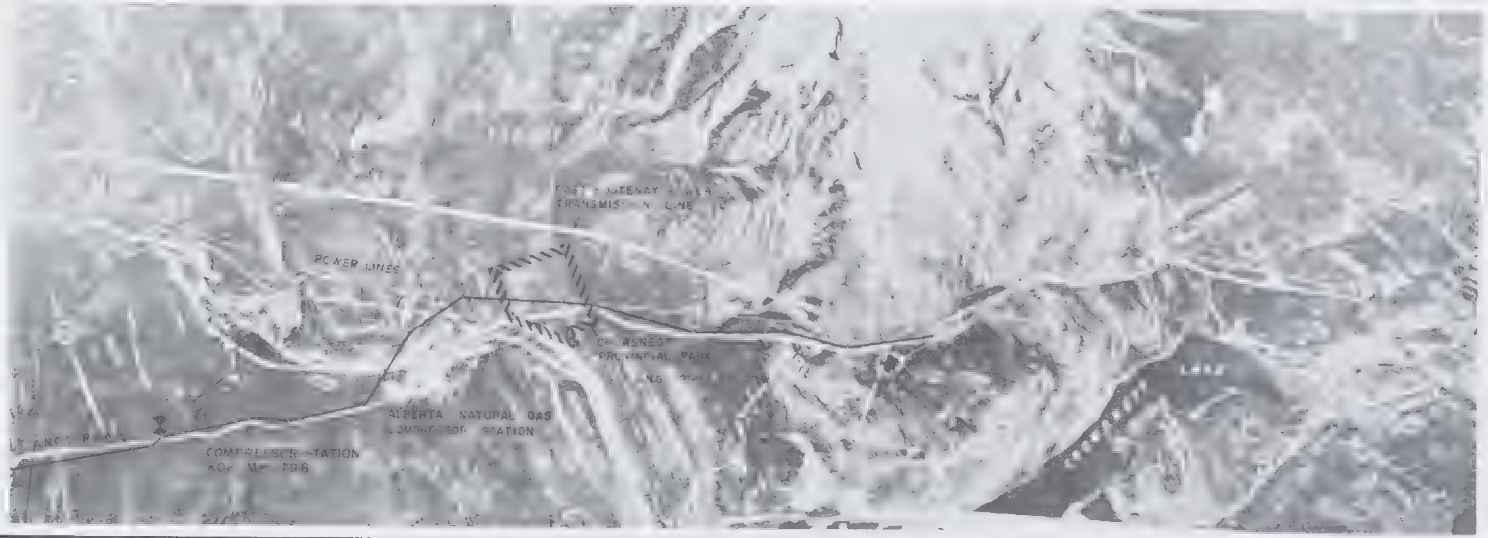
OWNERSHIP

DRILL HOLE DATA

PROFILE







CONSTRUCTION DATA

REFERENCE DRAWINGS

FOOTAGE THIS SHEET

SCALE miles

U.T.M. GRID ZONE

PIPELINE LEGEND

- POINT OF INTERSECTION
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- WARNING SIGN
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- WINTER TRAIL

LINE PIPE	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

COATING DATA

QUAN	DESCRIPTION	ITEM Nº

REFERENCE DRAWINGS	DWG. Nº

GENERAL NOTES
SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

B-0 No buoyancy
B-1 Potential buoyant conditions along segment
B-2 Potential buoyant conditions along portions of the segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nº
CA73154	97 108

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MAX. TEST PRESSURE	2000 psi
MAX. OPERATING PRESSURE	1680 psi

NORTHERN Engineering Services Company Limited

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

BRITISH COLUMBIA

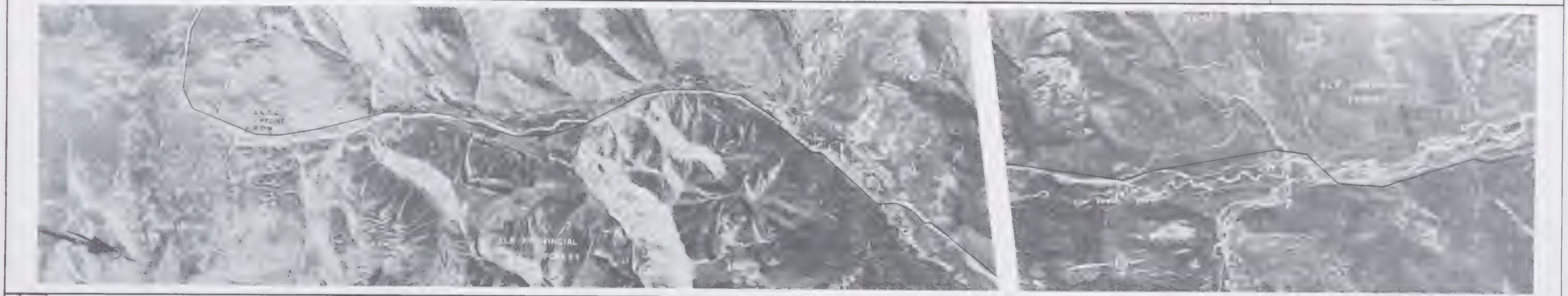
UPSTREAM M.P.
DOWNSTREAM M.P.

DRN BY
DATE
APPRD BY Jil
Jan 27/74
SCALE 1 = 2000
SHEET 17 OF 25
2C-0200-1017

OWNERSHIP

DRILL HOLE DATA

PROFILE



CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE (miles)

PIPELINE LEGEND

HEAVY WALL PIPE
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
BORROW SITE
TEST LEAD & DIRECTION OF WIRES

PIPE DATA	QUAN
CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

COATING DATA

QUAN	DESCRIPTION

REFERENCE DRAWINGS | DWG Nº

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

PHOTO Nº

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº
MIN TEST PRESSURE
MAX OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

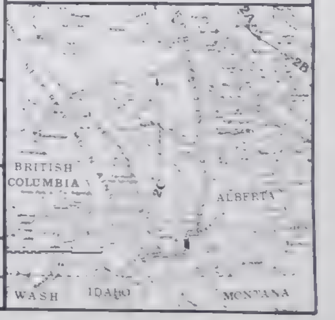
GAS PIPELINE ROUTE ALIGNMENT DATA

BRITISH COLUMBIA

UPSTREAM M.P.
DOWNSTREAM M.P.

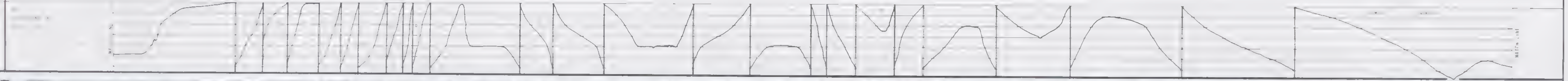
SHEET 18 of 25

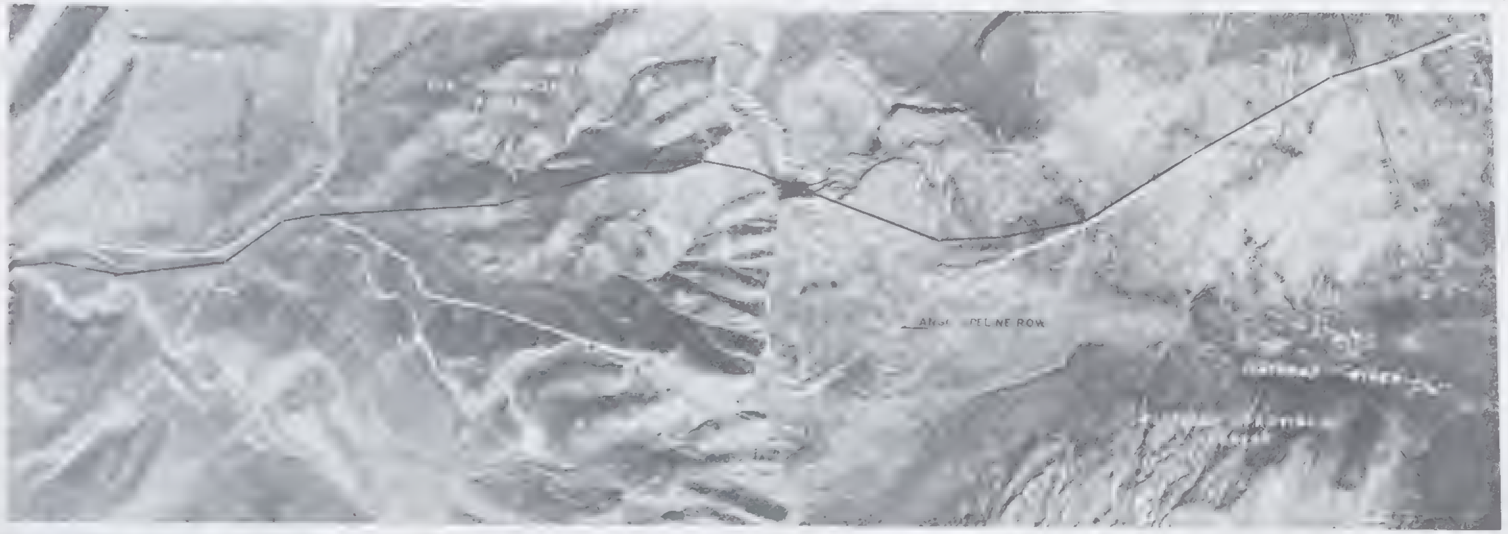
2C-0200-1018

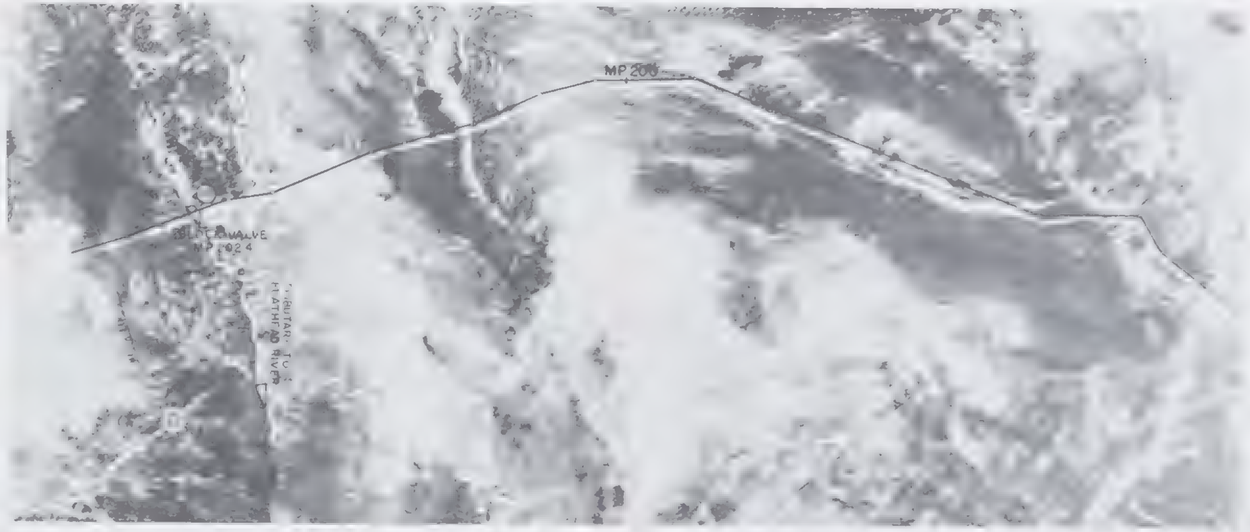


DRILL HOLE DATA

PROFILE







CONSTRUCTION DATA

FOOTAGE THIS SHEET

SCALE miles

PIPELINE LEGEND

HELIPAD
MEASURING STATION
COMMUNICATIONS TOWER
SIDE VALVE
WATER TRAIL
COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
BORROW SITE
WHARF
FROST ANCHOR
ANCHOR BLOCK

PIPE DATA	
HEAVYWALL - 42"OD x 0.900" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

REFERENCE DRAWINGS | DWG Nº

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY	
ROLL Nº	PHOTO Nºs
CR 3 54	75 79

OPERATING LICENCE Nº	
CONSTRUCTION PERMIT Nº	
MIN TEST PRESSURE	2100 psi
MAX OPERATING PRESSURE	1680 psi

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
BRITISH COLUMBIA

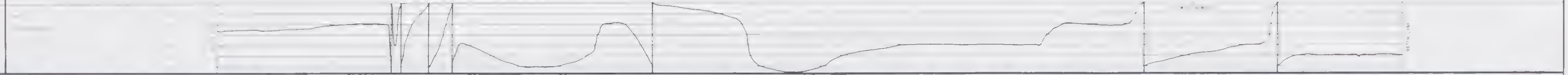
UPSTREAM M.P. DOWNSTREAM M.P.

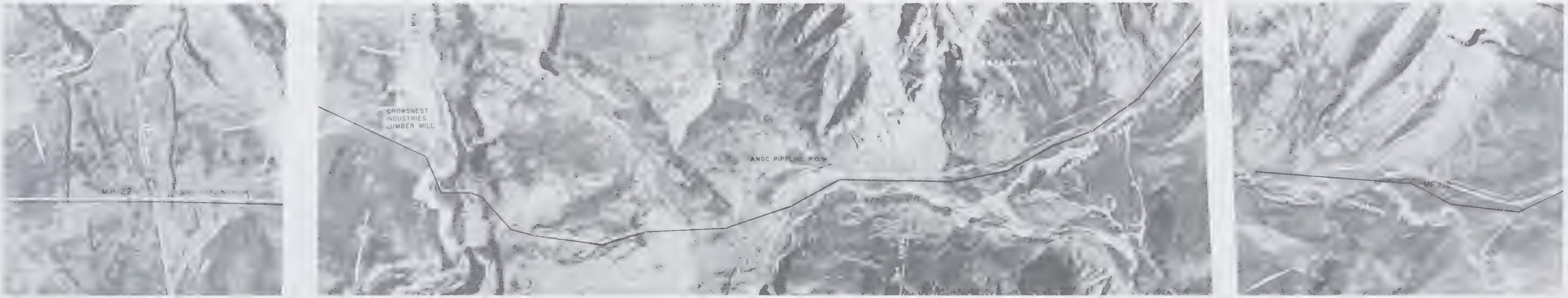
CHKD BY
APPRD BY
SCALE 1" = 2000'
SHEET 19 OF 25
2C-0200-1019

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

MATCH LINE

MATCH LINE

MATCH LINE

MATCH LINE

FOOTAGE THIS SHEET

SCALE miles

PIPELINE LEGEND

POINT OF INTERSECTION
DRILL HOLE LOCATION
WARNING SIGN
MILEPOST SIGN AIRCRAFT
DRAINAGE STATION
COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
WHARF
PERMANENT ROAD
TEMPORARY ROAD

PIPE DATA	QUAN
HEAVYWALL - 42" O.D. x0.905" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
B 0 No buoyancy
B 1 Potential buoyancy
B 2 Potential buoyancy
the segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
CR73-54	6 53 65 71

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº
MAX. PERMITTING PRESSURE 680 psi

Nº	DATE	REVISION	APPD BY	APPD BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
BRITISH COLUMBIA

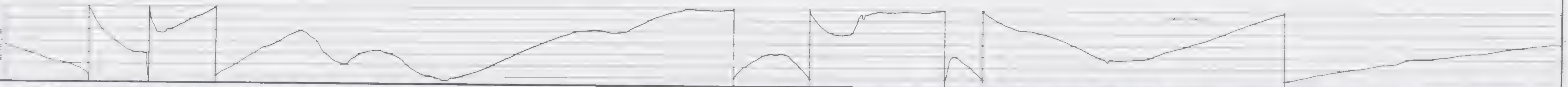
UPSTREAM M.P. 209
DOWNSTREAM M.P. 220

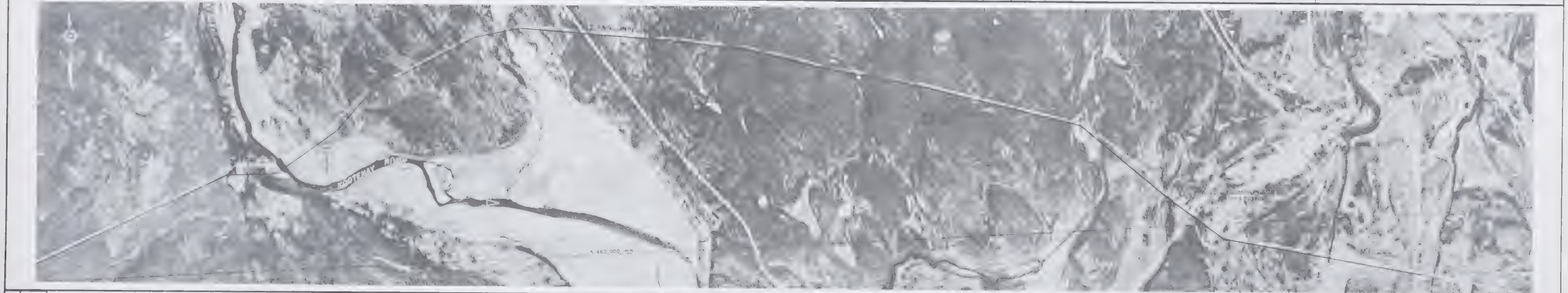
APPR. BY
SCALE 1 = 2000
SHEET 20 OF 25
20-0200-1020

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

REFERENCE (SHOWN IN NOTES)

MATCH LINE

FOOTAGE THIS SHEET

U.T.M. GRID ZONE

SCALE miles

PIPELINE LEGEND

- PIPE
- PIPE
- BERM BREAK
- RIVER WEIGHT
- FROST ANCHOR
- SCREW ANCHOR
- HEAVY WALL PIPE
- CASING PIPE
- ANCHOR BLOCK
- BLOCK VALVE
- OF WIRES
- POINT OF INTERSECTION
- DRILL HOLE LOCATION
- WARNING SIGN
- LOCATION
- COMPRESSOR STATION
- AIR STRIP
- STORAGE OR STAGING AREA
- CAMP SITE
- STAGING AREA & CAMP SITE
- BORROW SITE
- WHARF
- PERMANENT ROAD
- TEMPORARY ROAD
- HELIPAD
- MEASURING STATION
- COMMUNICATIONS TOWER
- SIDE VALVE
- WINTER TRAIL

CARRIER - 42" OD x 0.630" WT GRADE 70	
HEAVYWALL - 42" OD x 0.905" WT GRADE 65	

COATING DATA

QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS

DWG Nº

GENERAL NOTES

1. SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

B-1 Potential buoyant conditions along segment

AERIAL PHOTOGRAPHY

ROLL Nº

PHOTO Nº

OPERATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE 2100 psi

REVISION

APPD BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR

CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

BRITISH COLUMBIA

UPSTREAM M.P.

DOWNSTREAM M.P.

DRN BY

DATE

CHKD BY

APPD BY

SCALE 1:2000

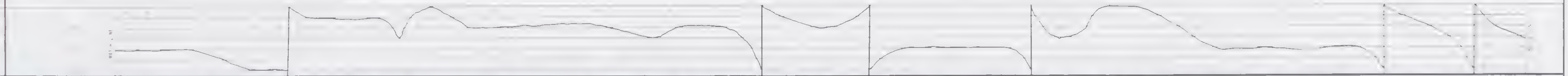
SHEET 21 OF 25

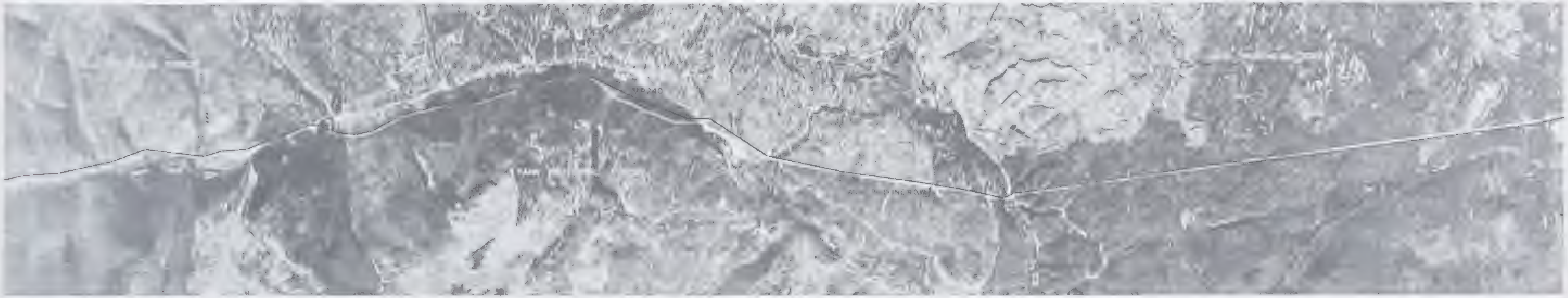
2C-0200-1021

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

FOOTAGE THIS SHEET

U T M GRID ZONE

SCALE MILES

PIPELINE LEGEND

POINT OF INTERSECTION
DRILL HOLE LOCATION
WARNING SIGN
COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
STAGING AREA & CAMP SITE
BORROW SITE
WHARF
PERMANENT ROAD
TEMPORARY ROAD

PIPE DATA	QUAN
ARCTIC 42"OD x 0.630" WT GRADE 70	
HEAVYWALL - 42"OD x 0.905" WT GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQN Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES
1 SEGMENT MILEPOST EQUALS MATCHLINE MILEPOST PLUS CHAINAGE VALUE
2 MINIMUM DEPTH OF COVER = 2.0 FEET

BUOYANCY LEGEND
B-0 No buoyancy
B-1 Potential buoyant conditions along segment
B-2 Potential buoyant conditions along portions of segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
[illegible]	[illegible]

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº

Nº	DATE	REVISION	APPRD BY	APPRD BY

NORTHERN ENGINEERING SERVICES
COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
BRITISH COLUMBIA

UPSTREAM M.P. 233
DOWNSTREAM M.P. 235

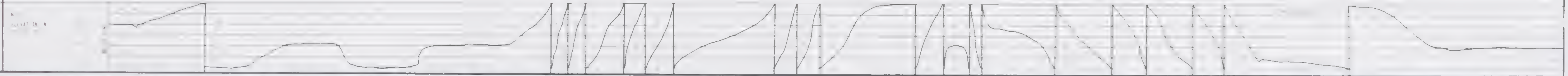
SCALE 1:3000
REF 22 - 25

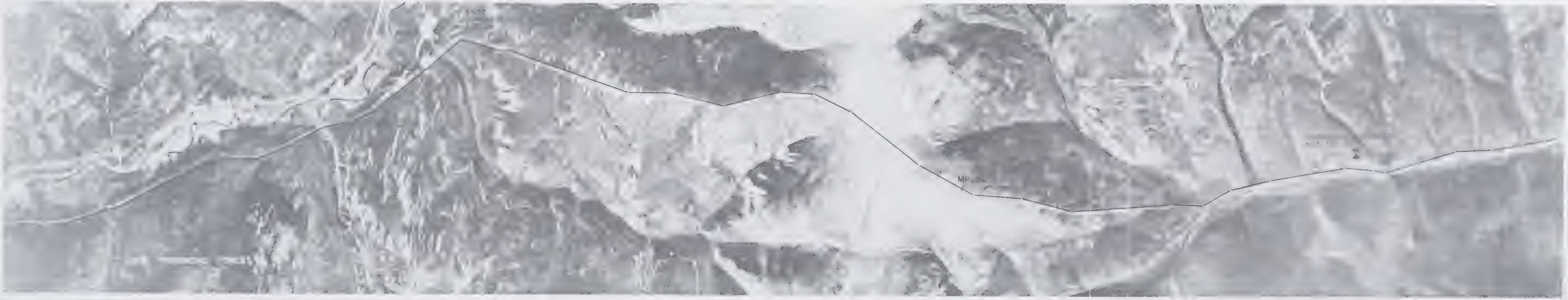
2C-0200-1022

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

REFERENCE DRAWINGS & NOTES

FOOTAGE THIS SHEET

U.T.M. GRID ZONE

5

SCALE miles

PIPELINE LEGEND

POINT OF INTERSECTION
DRILL HOLE LOCATION
WARNING SIGN
MARKER LOCATION
AIR STRIP
STORAGE OR STAGING AREA
CAMP SITE
BORROW
SHAFT
PERMANENT ROAD
TEMPORARY ROAD
HELIPAD
MEASURING STATION
COMMUNICATIONS TOWER
SIDE VALVE
WINTER TRAIL

PIPE DATA	QUAN
CARRIER - 42" O.D. x 0.630" W.T. GRADE 70	
HEAVYWALL - 42" O.D. x 0.905" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REF. Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES:
1. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nº
1C213	60 - 70

REGULATING LICENCE Nº

CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE

MAX. OPERATING PRESSURE 1680 psi

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA

BRITISH COLUMBIA

UPSTREAM M.P.

DOWNSTREAM M.P.

DRN. BY

DATE

SCALE 1:2000

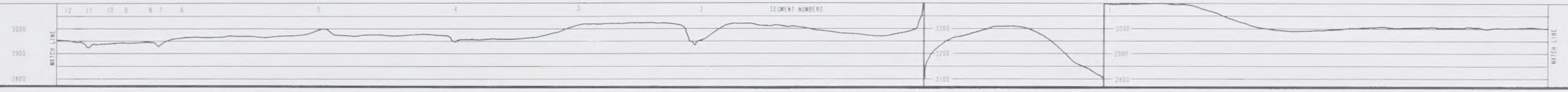
SHT. 23 - 25

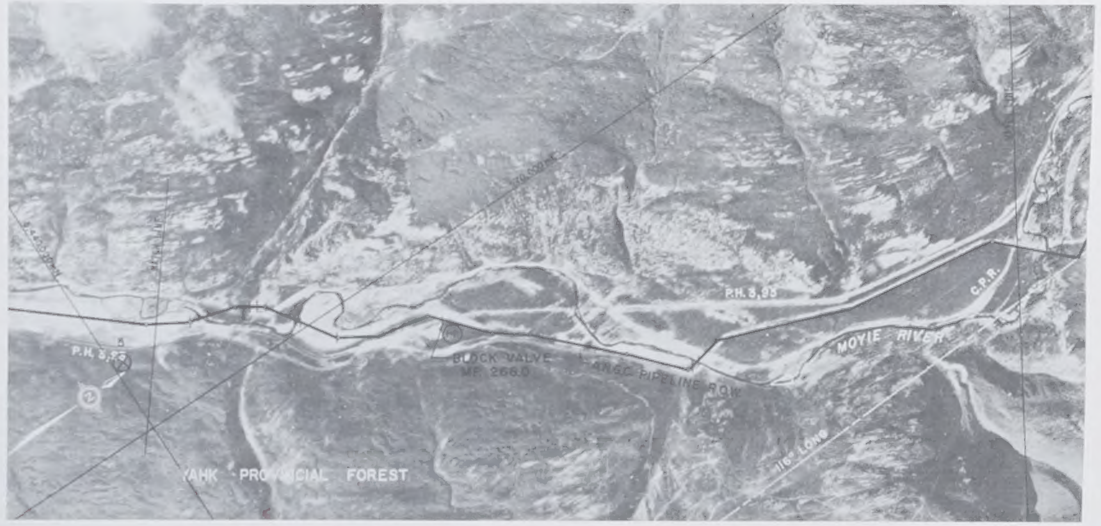
2C-0200-1023

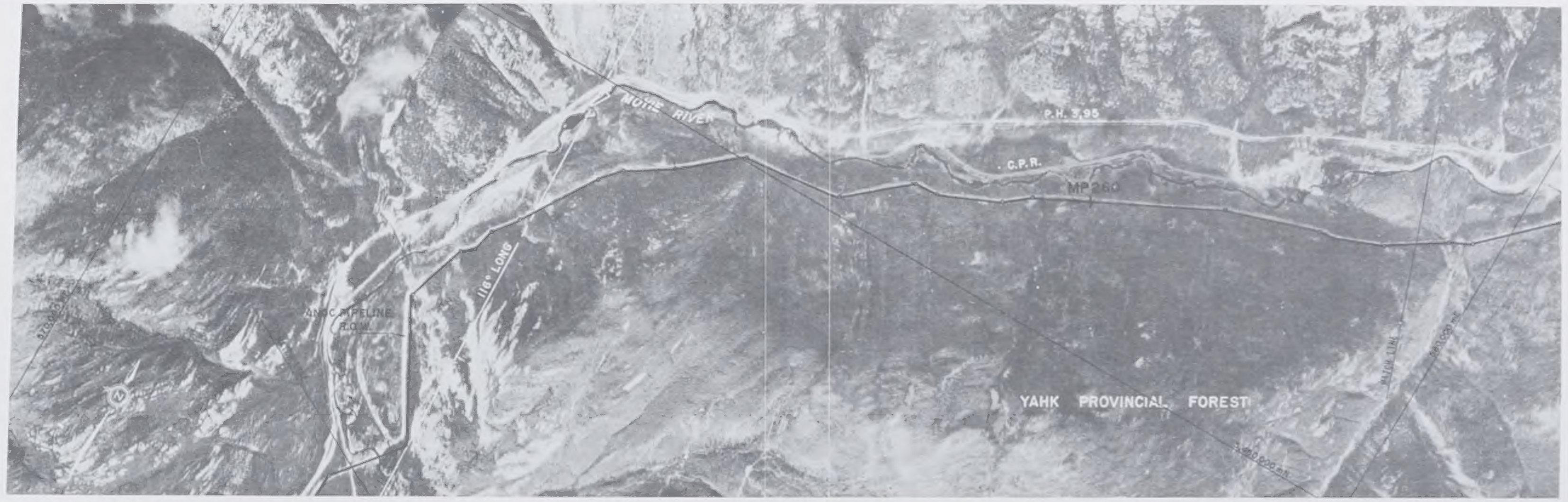
OWNERSHIP

DRILL HOLE DATA

PROFILE







CONSTRUCTION DATA

REFERENCE DRAWINGS & NOTES: MATCH LINE 269.57; 4-0210-1099; 4-0100-0002, 4-0210-1099; 4-0120-0002, 4-0210-1099; 4-0100-0003, 0300-8000; 4-0210-1099, 4-0100-0002; 4-0100-0002 MATCH LINE; MATCH LINE; 4-0210-1000; MATCH LINE 258.28

CHAINAGE (miles): 11.26; 11.08; 10.98; 10.77; 10.73; 10.53; 10.50; 10.30; 8.43; 8.38; 6.67; 6.67; 6.41; 0.0

DESIGN DATA: C.P.R.; C.P.R.; ROAD; C.P.R.; C.P.R.

SEGMENT Nº	SEGMENT LENGTH	BUOY.
12	0.18	B-0
11	0.10	N A
10	0.21	B-0
9	0.04	N A
8	0.20	B-0
7	0.03	N A
6	0.20	B-1
5	1.87	B-0
4	0.05	N A
3	1.71	B-0
2	0.26	N A
1	6.41	B-0

FOOTAGE THIS SHEET

0 0.5 1.0
SCALE (miles)

U.T.M. GRID ZONE 11

PIPELINE LEGEND

CARRIER PIPE (CAMP SHOWN)
CARRIER PIPE (DEPTH SHOWN)
BERM BREAK
SWAMP WEIGHT
RIVER WEIGHT
FROST ANCHOR
SCREW ANCHOR
HEAVY WALL PIPE
CASING PIPE
ANCHOR BLOCK (GROUND)
BLOCK VALVE
TEST LEAD & DIRECTION OF WIRES

POINT OF INTERSECTION
DRILL HOLE LOCATION
WARNING SIGN
MILEPOST SIGN AIRCRAFT
CHAINAGE EQUATION
COMPRESSOR STATION
AIR STRIP
STORAGE OR STAGING AREA
CAMP SITE
STAGING AREA & CAMP SITE
BORROW SITE
WHARF

PERMANENT ROAD
TEMPORARY ROAD
HELIPAD
MEASURING STATION
COMMUNICATIONS TOWER
SIDE VALVE
WINTER TRAIL

PIPE DATA	QUAN.
CARRIER - 42" O.D. x 0.630" W.T. GRADE 70	
HEAVYWALL - 42" O.D. x 0.905" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL		
QUAN.	DESCRIPTION	REQ'N Nº

REFERENCE DRAWINGS	DWG. Nº

GENERAL NOTES:
1. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND
- B-0 No buoyancy
- B-1 Potential buoyant conditions along segment
- B-2 Potential buoyant conditions along portions of the segment

AERIAL PHOTOGRAPHY	
ROLL Nº	PHOTO Nºs
YC2135	28-34
YC2135	37-41

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº

MIN TEST PRESSURE	2100 p.s.i.
MAX OPERATING PRESSURE	1680 p.s.i.

Nº	DATE	REVISION	APPRO BY	APPRO BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
BRITISH COLUMBIA

UPSTREAM M.P. 258
DOWNSTREAM M.P. 270

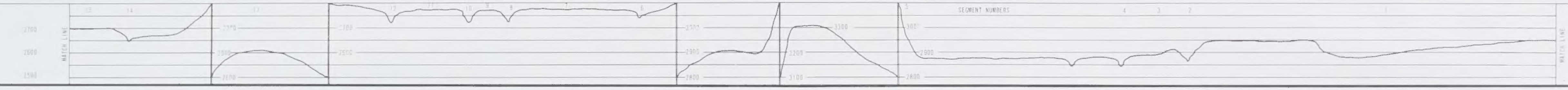
DRN BY	DATE
CHKD BY	Jan 23/74
APPRD BY	Jan 23/74

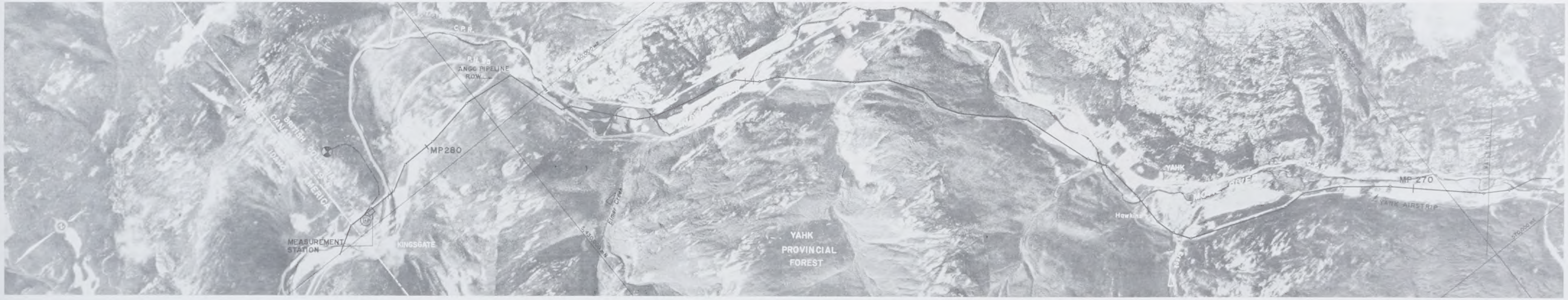
SCALE 1" = 2000'
SHEET 24 OF 28
2C-0200-1024

OWNERSHIP

DRILL HOLE DATA

PROFILE





CONSTRUCTION DATA

REFERENCE DRAWINGS & NOTES	CHAINAGE (miles)	DESIGN DATA
U.S.A. BORDER 281.00	CANADA 11.48	M
0700-1000		
4-0100-0002 4-0210-1099	11.04 11.00	C.P.R.
4-0100-0003		ROAD
4-0100-0003 4-0210-1099	8.87 8.81	ROAD
4-0210-1099	8.42 8.37	
4-0210-1099	8.07 8.02	
4-0210-1099 4-0100-0003	7.12 7.05	ROAD
4-0210-1099	3.72 3.63	
4-0210-1099	3.21 3.09	
4-0100-0003		ROAD
MATCH LINE 269.52	0.0	

SEGMENT Nº	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
SEGMENT LENGTH	0.44	0.04	2.13	0.06	0.39	0.05	0.30	0.05	0.90	0.07	3.33	0.09	0.42	0.12	3.09
BUOY.	B-0	N A	B-0	N A	B-0	N A	B-0	N A	B-0	N A	B-0	N A	B-0	N A	B-0

FOOTAGE THIS SHEET

0 0.5 1.0
SCALE: (miles)

U.T.M. GRID ZONE 11

PIPELINE LEGEND

	CARRIER PIPE (above ground)	○	POINT OF INTERSECTION		PERMANENT ROAD
	CARRIER PIPE (below ground)	⊙	DRILL HOLE LOCATION		TEMPORARY ROAD
▼	BERM BREAK		WARNING SIGN	HP	HELIPAD
	SWAMP WEIGHT		MILEPOST SIGN AIRCRAFT	M	MEASURING STATION
	RIVER WEIGHT	★	CHAINAGE EQUATION		COMMUNICATIONS TOWER
	FROST ANCHOR	C	COMPRESSOR STATION		SIDE VALVE
	SCREW ANCHOR	A	AIR STRIP		WINTER TRAIL
	HEAVY WALL PIPE	△	STORAGE OR STAGING AREA		
	CASING PIPE	▲	CAMP SITE		
	ANCHOR BLOCK (concrete)		STAGING AREA & CAMP SITE		
	BLOCK VALVE	⊗	BORROW SITE		
	TEST LEAD & DIRECTION OF WIRES	■	WHARF		

PIPE DATA	QUAN
CARRIER - 42" O.D. x 0.630" W.T. GRADE 70	
HEAVYWALL - 42" O.D. x 0.905" W.T. GRADE 65	

COATING DATA

MISCELLANEOUS MATERIAL

QUAN	DESCRIPTION	REQ'N Nº

REFERENCE DRAWINGS	DWG Nº

GENERAL NOTES:
1. SEGMENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHAINAGE VALUE.
2. MINIMUM DEPTH OF COVER = 2.5 FEET

BUOYANCY LEGEND

B-0	No buoyancy
B-1	Potential buoyant conditions along segment
B-2	Potential buoyant conditions along portions of the segment

AERIAL PHOTOGRAPHY

ROLL Nº	PHOTO Nºs
YC2135	42-53

OPERATING LICENCE Nº
CONSTRUCTION PERMIT Nº

MIN. TEST PRESSURE	2100 p.s.i.
MAX. OPERATING PRESSURE	1680 p.s.i.

Nº	DATE	REVISION	APPRD BY	APPRD BY

NORTHERN ENGINEERING SERVICES COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS FOR
CANADIAN ARCTIC GAS PIPELINE LIMITED

GAS PIPELINE ROUTE ALIGNMENT DATA
BRITISH COLUMBIA

UPSTREAM M.P. 270
DOWNSTREAM M.P. 281

DRN BY
DATE
CHKD BY
3 Aug/74
APPRD BY
13/74
SCALE 1" = 2000'
SHEET 25 OF 25
2C-0200-1025